Orthopedics

Questions and Answers

Part 2

Form 1

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COMPLETE CHAIN DOCTORS

Q1: Hypercalcemia commonly occurs in which of the following bone lesion:

a- Osteosarcoma.
b- Multiple myeloma.
c- Malignant fibrous histiocytoma.
d- Chondrosarcoma.
e- Hemangioendothelioma.

Q2: In the patient with destructive lesion secondary to metastatic breast cancer, the cells responsible for the bone destruction are the:

a- Breast cancer.
b- Fibroblasts.
c- Osteoclasts.
d- Histocytes.
e- Langerhans cells.

Q3: In which of the following tumors is the bone-scan the least sensitive:

a- Multiple myeloma.
b- Metastatic breast cancer.
c- Metastatic lung cancer.
d- Osteosarcoma.
e- Osteoid Osteoma.

Q4: All the following are advantages of the bipolar arthroplasty over the monopolar arthroplasty in the management of femur neck fractures, EXCEPT.

a- Lower dislocation rate.
b- Less acetabular protrusion.
c- Less revision rate.
d- Less deep vein thrombosis.
e- More motion.

c. The earliest orthopedic treatment is the treatment of birth fractures.
d. Sensation is intact.
e. The classic form of arthrogryposis is referred to as amyoplasia.

6. Slipped capital femoral epiphysis is a disorder which occurs in adolescence and manifest itself by all of the following except
a. The pain is localized to the anterior hip, groin or medial thigh and knee.
b. In stable slip there is independent fluoroscopic movement of the epiphysis with respect to the neck.
c. Callus formation at the periphery of the physis is a radiographic sign of chronicity.
d. Typically the patient is an obese child who walks with antalgic gait with the leg in internal rotation. @
e. The severity of the slip correlates with the amount of obligatory external rotation during passive hip flexion.

7. The following findings have been shown to correlate with long-term progression of Legg-Calve_Perthes disease except
a. lateral epiphyseal calcification.
b. 9 years old girl with loss of hip motion.
c. Gage's sign which is medial epiphyseal metaphyseal triangular lucency. @
d. Horizontal appearance of the growth plate.
e. Metaphyseal cysts.

8. The following have long been considered as risk factors for developmental dysplasia of the hips except
a. Breech position.
b. Congenital muscular torticollis.
c. Metatarsus adductus.
d. Congenital recurvatum/dislocation of the knee.
e. Multipara gravida. @

9. Concerning the principles of treatment of children with developmental dysplasia/dislocation of the hip, all the following are true except
a. closed reduction is the preferred method of treatment in children up to 24 months of age.
b. Open reduction is indicated whenever a concentric reduction cannot be obtained and at any age.
c. Femoral shortening reduces tension across the hip.

b. Straight cast.
c. Elective complete surgical release. @
d. Ankle foot orthosis.
e. Surgical hindfoot release.

15. The following should take place in the surgical management of club foot

a. the plantar fascia and tight intrinsic muscles are divided.
b. Z-plasty lengthening of the tendo Achilles and tibialis posterior.
c. The tight capsules are divided.
d. The navicular and the cuboid are released.
e. The extent of the release depends on the deformity. @

16. All the following are prerequisites for hip arthrodesis in management of paralytic polio hip dislocation except

a. Good surrounding musculature.
b. Strong contralateral knee. @
c. Free from contractures.
d. Above the age of 10 years.
e. Stable foot and ankle.

Q5: All the following factors serve as an optimal bone formation during Distraction oesteogenesis, EXCEPT:

a- Distraction before bone consolidation.
b- Low energy corticotomy.
c- Latency period of 5-7 days.
d- Early weight bearing.
e- Distraction 1mm four times per day.

Q6: The key anatomic factor in treating tarsometatasal fracture-dislocation is restoration of :

a- The relationship of the base of the fifth metatarsal to the cuboid.
b- The relationship of the second metatarsal to the cuneiforms.
c- The intermetatarsal ligament between the first and second metatarsal.
d- The relationship of the first metatarsal to the medial cuneiform.
e- The relationship of all bases of the five metatarsals to the calcaneum, cuboid, and cuneiforms.

Q7: The usual presentation of traumatic subscapularis tears is most often seen after forced:

a- Internal rotation.
b- External rotation.
c- Extension.
d- Abduction.
e- Forward flexion.

Q8: One of the following characteristics is seen in a patient with osteochondritis dissecans of the elbow:

a- MRI reveals separation of cartilage from the capitellum and chondral fissuring.
b- Fragmentation of the entire capitellar ossific nucleus.
c- Normal capitellar regrowth with no late sequelae.
d- Age younger than 10 years.
e- Medial ulnar collateral ligament laxity.

Q9: What is the most common complication of an extensile lateral approach for a closed, displaced joint depression intra-articular calcaneus fracture?

a- Non-union.
b- Deep infection.
c- Delayed wound healing.
d- Peroneal tendinitis.
e- Post traumatic arthritis.

Q10: In a patient with rheumatoid arthritis of the wrist, the extensor tendon that most at risk of rupture is:

a- Abductor pollicis longus.
b- Extensor Indecis.
c- Extensor digiti quinti.
d- Extensor carpi radialis brevis.
e- Extensor carpi ulnaris.

Q11: One of the following findings is a contraindication to isolated percutaneous pinning of a distal radial fracture:

OP in adults
Volar Bella

a- Dorsal comminution.
b- Volar comminution.
c- Radial comminution.
d- Intra-articular fracture.
e- Physeal fracture.

Q12: An adult patient has a closed humeral fracture that was treated none surgically and a concomitant radial nerve injury. Six weeks after the injury, electromyography shows no evidence of recovery. Management should now consist of:

a- Exploration and neuroanalysis/repair.
b- MRI of the arm.
c- Functional electrical stimulation.
d- Radial nerve tendon transfers.
e- Observation.

Q13: Which of the following patients is at greatest risk of death as a consequence of cement insertion during hip hemiarthroplasty for fracture?

a- The asthmatic patient.
b- The hypovolaemic patient.
c- The patient recently treated for chest infection.
d- The patient with moderate fluid overload.
e- The patient with pre-existing lung disease.

Q14: The most common associated injury with high-energy pelvic fractures is:

a- Closed head injury.
b- Liver injury.
c- Peripheral nerve injury.
d- Thoracic injury.
e- Ruptured spleen.

ATLS
Multi trauma PT
Cervical
Open # tibia

Q15: An adult patient with cut wrist given I.V block anesthesia on exploration found to have only skin and fascia, which sutured at once the appropriate time to deflate the tourniquet, is

a- Immediately
b- After to 5 – 10 min
c- After 20 – 25 min
d- After 1 hour
e- After 1.5 hour

Toxic dose
Tourniquet time
• Lignocain
• Marcain
• Cardiac toxicity arrest
• Anaphylactic
• Seizure

Q16: How is osteoporosis defined in the clinical setting?

a. Bone mass > 1 SD below the mean for an age matched individual.
b. Bone mass > 2.5 SD below the mean for an age matched individual.
c. Bone mass > 1 SD below the mean for a young adult.
d. Bone mass > 2.5 SD below the mean for a young adult.
e. Bone mass > 1 SD below the mean for an age matched individual in association with fragility fracture.

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Q17: In the initial stages of Charcot-Marie-Tooth disease (hereditary motor-sensory neuropathy) , a forefoot cavus deformity may develop as the result of an imbalance between which of the following muscles?

a- Posterior tibialis and peroneus longus
b- Tibialis anterior and gastrocnemius-soleus complex
c- Tibialis anterior and peroneus longus.
d- Flexor digitorum longus and extensor digitorum longus
e- Abductor hallucis and quadratus plantae

Q18: The following type of fracture is caused by a tensile force produced by muscle contraction:

a. Avulsion fracture of the ischial spine. No muscle attachment
b. Spiral fracture of femoral shaft.
c. Segmental fracture of fibula.
d. Transverse fracture of the patella.
e. Oblique fracture of the tibia.

Q19: What nerev is most commonly injured during an ilioinguinal approach to the acetabulum?

a- Femoral.
b- Ilioinuinal.
c- Obturator.
d- L5 nerve root.
e- Lateral femoral cutaneous.

Q20: What is the recommended course of action if preoperative assessment of a loose prosthesis revealed no evidence of infection but cultures taken from peri-prosthetic tissues at the time of revision surgery are positive?

a- Insure the patient receives three doses of prophylactic antibiotics.
b- Continue peri-operative antibiotics for five days.
c- Oral antibiotics for six weeks.
d- Intravenous antibiotics for six weeks.
e- Revise the joint.

Fungizid 1 IM

Remember sent 4 culture

Q21: An 11-years-old soccer player has left lateral ankle pain for the past 6 months. Examination shows increased heal valgus and decreased subtalar motion on the left side. Ankle range of motion and stability are symmetric. Radiographs of the foot and ankle are normal. The next most appropriate step in management should consist of.

a- Observation with follow-up in 6 months.
b- A full shoe orthosis with medial heel posting left.
c- Left sinus tarsi injections with local anesthetic.
d- Comparative stress radiographs of both ankles.
e- CT of the left foot.

Q22: All of the following are direct stabilizers of the shoulder joint except:

a- Coracoclavicular ligaments.
b- Rotator cuff muscles.
c- Glenoid labrum.
d- Intraarticular negative pressure.
e- Glenohumeral ligaments.

Q23: Arthroscopic treatment of septic arthritis proven to have the same outcome as arthrotomy and even with lower morbidity in:

a- Hip.
b- Knee.
c- Ankle.
d- Elbow.
e- Wrist.

Q24: Acrylic bone cement has the following features except:

a- It anchors the implant to bone.
b- There is mechanical bonding at the bone-cement interface.
c- There is chemical bonding at the implant-cement interface.
d- Used for optimal stress distribution.
e- Used with polished implants although there is less friction.

Q25: According to AO classification of fractures severely comminuted completely intraarticular distal radius fracture is:

a- 22C3.
b- 22C2.
c- 23C3.
d- 23C2.
e- 32C2.

Q26: If on assessing the symmetry of flexion extension gaps the Ext is tight, Flex is good the solution is:

a- cut more tibia.
b- Take off more distal femur.
c- Distal femoral augments.
d- Go one size up and Fill up posterior gap with cement or metal augmentation.
e- Use thicker PE.

Q27: The best exercises for strengthening muscles with disuse atrophy are:

a- Range of motion.
b- Active assistance.
c- Passive.
d- Resistive.
e- Non-weight exercises.

Q28.The initial evaluation of a suspected bone neoplasm should consist of which of the following imaging studies?

(a) Magnetic resonance imaging.
(b) Computed tomography.
(c) Plain radiography.
(d) Bone scintigraphy.
(e) Tomography.

Q29. Which of the following lesions is least likely to produce a lytic defect in an epiphyseal region?

(a) Giant cell tumor.
(b) Chondroblastoma.
(c) Eosinophilic granuloma.
(d) Nonossifying fibroma.
(e) Osteomyelitis.

Q30. Dorsal wrist ganglion originate from the:

a) Dorsal carpal ligament.
b) Dorsal capsule.
c) Scapholunate ligament.
d) Capitolunate joint.
e) Extensor digitorum communis tendon.

Q31. Syndactyly may be isolated,it may be bilateral or it may be occure as part of a broader genetic syndrome which of the following syndromes are commonly associated with syndactyly:

a) Hinter syndrome.
b) Vater syndrome.
c) Aperts syndrome.
d) Marfan syndrome.
e) Down syndrome.

Q32. Which of the following bones are rarly affected by Paget's disease:

a) Skull and spine.
b) Ribs and facials bones.
c) Pelvis and femur.
d) Hand and feet.
e) Femur and tibia.

Q33. A 56-year-old female presented to the emergency department with sudden onset of cauda equina syndrome without any history of obvious trauma. All of the following causes can be expected except:

a) Pot's disease.
b) Epidural abscess.
c) Spinal cord ischemia.
d) Osteoporotic fracture.
e) Multiple myeloma.

Q34. Residual radiating pain after excision of the lumbar disc is caused by all of the following causes <u>Except</u>:

a) Residual disc herniation.
b) Iatrogenic nerve injury.
c) Hematoma.
d) Wound dehiscence.
e) Epidural adhesions.

Q35. Surgical treatment of spondylolisthesis is indicated in all of the following conditions <u>except:</u>

a) Sever pain with analgesia for 3-4 months.
b) With presence of muscle weakness.
c) Grade 2 spondylolisthesis.
d) Intermittent paresthesia of the lower limbs.
e) Neurogenic claudication.

Q36. A one-year-old boy presented to the spinal clinic with left-side Torticolles, the most important radiological investigation before doing surgery is:

a) Normal X-Ray antero-posterior and lateral.
b) Open mouth X-Ray.
c) CT scan.
d) MRI.
e) Dynamic X-Rays.

Q37. A person with weak gluteus medius can decrease hip joint moment during gait by increasing one of the following positions:

a) Anterior trunk lean.
b) Posterior trunk lean.
c) Contralateral trunk lean.
d) Trunk lean toward the affected hip.
e) Ipsilateral trunk tilt.

Q38. The following conditions characteristically predispose to osteoarthritis EXCEPT:

a) Osteoporosis.
b) Joint laxity.
c) Haemophilia.
d) Osteochodritis Discecanse.
e) Haemochromatosis.

Q39. Which of the following amputations has the LEAST increase in metabolic demand for walking compared to patients without amputation:

a) Traumatic transtibial amputation.
b) Vascular transtibial amputation.
c) Vascular thru- knee amputation.
d) Traumatic transfemoral amputation.
e) Vascular transfemoral amputation.

Q40. Pain from a herniated lumbar disk is caused by:

a) Ischemia and potential necrosis of the nerve root.
b) Associated spinal stenosis.
c) Herniated nucleus pulposus and the resulting local inflammation.
d) Local instability due to a ruptured nucleus pulposus.
e) Rupture of the thecal sac.

Q1: **One of the following best describes the current treatment of a parosteal osteosarcoma of the distal femur:**

a. Wide resection alone.
b. Wide resection and multi-agent chemotherapy.
c. Wide resection, multi-agent chemotherapy, and radiation.
d. Wide resection and radiation.
e. Interferon and radiation.

Q2: **One of the following tumors is the least sensitive to bone scan:**

a. Metastatic breast cancer.
b. Metastatic lung cancer.
c. Osteosarcoma.
d. Multiple myeloma.
e. Osteoid osteoma.

Q3: **In evaluating the radiographs of a patient with Paget's disease, One of the following would be suggestive of malignant change:**

a. Enlargement of the bone.
b. Coarsened trabeculae.
c. Marked bowing.
d. Multiple lucent areas.
e. Cortical bone destruction.

Q4: **One of the following descriptions is more characteristic of tuberculosis than pyogenic spondylitis:**

a. Disc space is narrowed before significant bony changes occur.
b. Involvement of multiple contiguous levels is uncommon.
c. Bony erosions seen on computerized tomography are usually small and focal.
d. Vertebral destruction exceeds disc destruction.
e. Magnetic resonance imaging rarely shows significant soft tissue swelling.

Q5: **A 4-year-old boy is brought to a clinic because he has been fussy, febrile, and unable to bend over for the past 4 days. In the office, his temperature is 38.2° C and his neurologic examination is normal. His lumbar lordosis is flattened and he resists flexion or extension. He has normal range of hip motion. Plain films of the lumbar spine are normal. The next imaging study should be:**

a. Magnetic resonance imaging of the spine.
b. Hip arthrogram.
c. Spinal ultrasound.
d. Computed tomograms of the lumbar spine.
e. Indium labeled white blood cell scan.

Q6: **A 5-year-old girl is brought to the emergency department because of inability to walk. Her temperature is 37.8° C. She has pain with rotation of the hip. However, if the movement is done slowly, the hip can be rotated internally and**

externally 45°. Her white blood cell count is 13,000 (upper normal is 12,500 for her age). Her erythrocyte sedimentation rate is 30. Radiographs of the pelvis and hip are normal. You recommend:

a. Bed rest with follow-up contact the next day
b. CT of the hip.
c. Hip aspiration
d. Magnetic resonance imaging
e. Irrigation and drainage of the hip

Q7: A 50-year-old male fell down and sustained an anterior dislocation of Rt Shoulder, reduction was performed, the most common cause for persistent pain following physiotherapy is:

a. Recurrent anterior Subluxation.
b. Entrapment of biceps tendon.
c. Intraarticular loose body.
d. Axillary nerve injury.
e. Rotator cuff tears.

Q8: All of the following are involved in rotator cuff tear arthropathy except:

a. Osteonecrosis
b. Chondrolysis
c. Rupture of the rotator cuff
d. Hydroxyapatite crystal deposition
e. Acromiohumeral arthritis

Q9: Following two previous shoulder stabilization procedures for recurrent dislocations, a 45-year-old man complains of pain and limited motion. Examination reveals increased passive external rotation, weakness when using his arm in the frontal plane, and an inability to lift the back of the hand away from his back. One of the following muscles is injured:

a. Subscapularis
b. Supraspinatous
c. Infraspinatus
d. Deltoid
e. Teres minor

Q10: In the surgical treatment of quadrilateral space syndrome, what structure needs to be surgically decompressed?

a. Axillary nerve

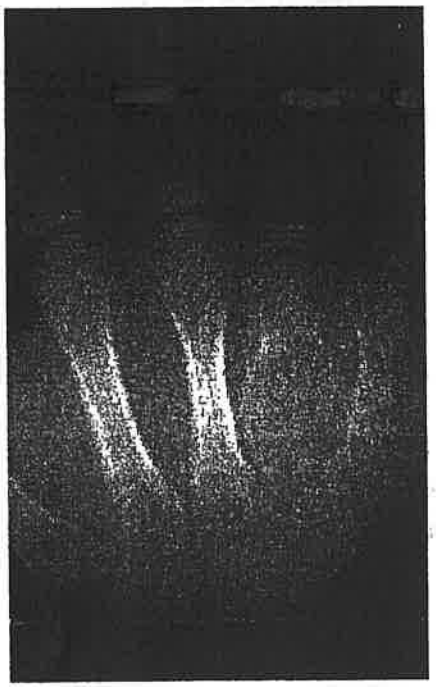
b. Long thoracic nerve
c. Axillary artery
d. Suprascapular nerve
e. Dorsal scapular nerve

Q11: In a Madelung's deformity, the greatest growth disturbance occurs in:

a. Distal ulna physis
b. Proximal radius physis
c. Volar-ulnar portion of distal radius physis
d. Radial portion of the distal radius physis
e. Dorsal-ulnar portion of distal radius physis

Q12: A 10-year-old child presents with an enlarging hand mass.

X-ray is shown.



You recommend:

a. Curettage
b. Curettage and bone graft
c. Radiation therapy
d. Wide resection and radiation therapy
e. Wide resection and chemotherapy

Q13: Instability is one of the frequent complications following shoulder arthroplasty. The instability is most commonly attributed to which of the following?

a. Subscapularis disruption
b. Position of the glenoid component
c. Altered rotation of the humeral component
d. Abnormal capsular tension and/or rotator cuff dysfunction
e. Wear or loosening of the glenoid component

Q14: One of the following is the most frequent complication of both lateral closing wedge high tibial osteotomy and medial opening wedge osteotomy:

a. Patella baja
b. Fracture
c. Peroneal nerve palsy
d. Compartment syndrome
e. Infection

Q15: During cemented total hip arthtoplasty, peak pulmonary embolization of marrow contents occurs when the:

a. Hip is dislocated
b. Femoral neck is osteotomized
c. Acetabulum is prepared
d. Acetabular component is inserted
e. Femoral stem is inserted

Q16: The figure (x) below shows the radiograph of a 12-year-old boy who underwent a reamed intramedullary nailing for a closed femoral shaft fracture. One year after rod removal, he reports groin pain. A current radiograph is show in figure (y). The findings are most likely the result of

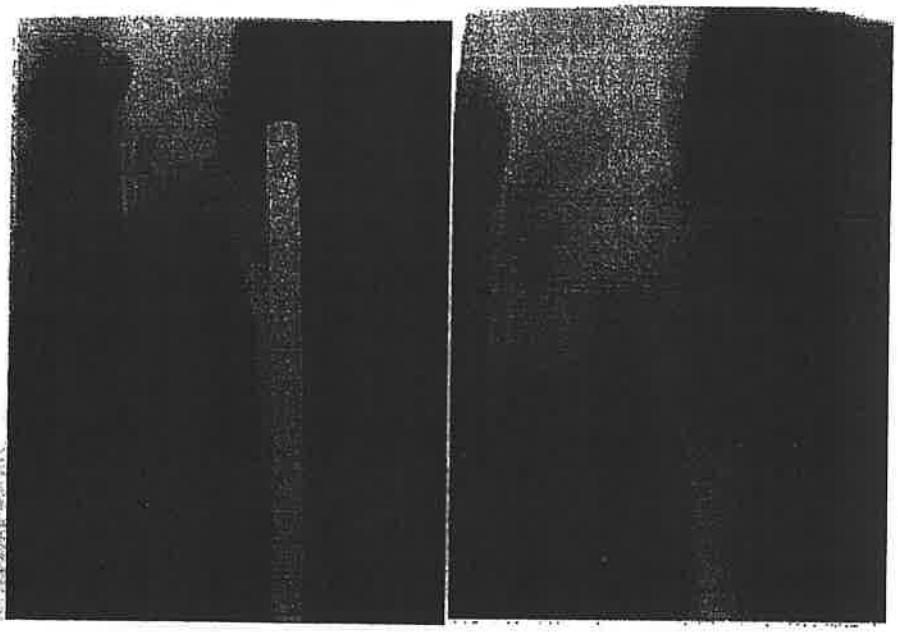


Figure (x) Figure (y)

a. A torn ligamentum teres
b. Damage to the femoral neck
c. Damage to the lateral ascending vessels of the femoral neck
d. Unrecognized Perthes' disease
e. Growth arrest of the proximal physis

Q17: During arthroscopic repair of a medial meniscal tear, the following structure is at greatest risk for damage:

a. Popliteal artery
b. Popliteal vein
c. Saphenous nerve ***
d. Sural nerve
e. Popliteus tendon

Q18: The rigidity of an external fixator can be increased by:

a. Decreasing the distance between the bone and rods
b. Decreasing the number of pins
c. Decreasing pin diameter
d. Separating the half pins by less than 30° when applying anterior and anteromedial frames
e. Decreasing the distance between fragment pin sets

Q19: At the time of open reduction and internal fixation of a depressed medial tibial plateau fracture, a peripheral medial meniscus tear is identified. Treatment should consist of:

a. Total menisectomy
b. Immediate repair of the meniscus
c. Delayed arthroscopic debridement of the meniscus after fracture union
d. Partial menisectomy
e. Meniscal replacement

Q20: A 25-year-old nonsmoking laborer presents with a closed, highly comminuted, displaced tibial plafond fracture and no other injuries. This is best managed with:

a. Immediate open reduction and internal fixation with lag screws
b. Immediate open reduction and internal fixation with a buttress plate
c. External fixation spanning the ankle and delayed internal fixation
d. Closed reduction and casting
e. Intramedullary nail

Q21: One of the following most commonly occurs in patients with pigmented villonodular synovitis of the knee:

a. Giving way with pivoting
b. Pain on ascending and descending steps
c. Recurrent non-traumatic effusions
d. Movie sign (pain following prolonged sitting)
e. Medial joint line pain

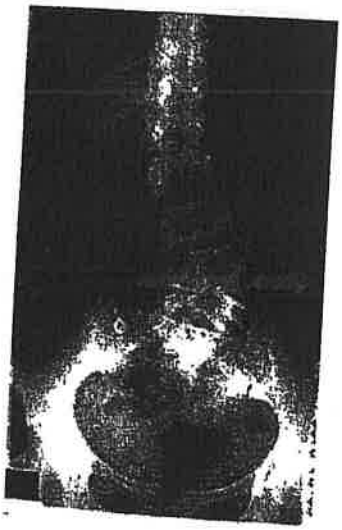
Q22: A 55-year-old female presented to the emergency complaining of lower back pain since two years which became severe in the last month without neurological deficits. She gave history of loss of body weight before 6 months. MRI below goes with:

a. Osteoporotic fracture of L4 and L5.
b. Bony metastases to L4 and L5.
c. Discitis of L5/S1.
d. Degenerative disc disease of L4/5.
e. Lymphoma affecting L4 and L5.

Q23: A 54-year-old male patient underwent decompression, fixation and fusion of L3-5. One year later, he developed lower back pain without neurological deficit. All of the following are possible causes of pain except:

a. Adjacent segment syndrome.
b. Adhesions around the dural sac.
c. Metal failure.
d. Late infection.
e. Bony loosening around the screws.

Q24: A 21-year-old female presented to the spinal clinic with deformity of the lower back with this X-Ray which shows left lumbar scoliosis.



According to the X-Ray above, the cause of scoliosis is:

a. Lumbar Idiopathic scoliosis.
b. Right side neglected fracture of L4 vertebral body.
c. Fused left hemivertebra with L4 and right fused L4/5.
d. Pelvic tilt with fused L5/S1.
e. Fusion of the L4 and L5 vertebra because of neglected Tuberculosis.

Q25: All of the following are indications for Kyphoplasty except:

a. Compressed Osteoporotic fracture.
b. Compressed non-osteoporotic fracture.
c. Multiple Myeloma.
d. Hemangioma of vertebral body.
e. Crushed vertebral body.

Q26: The most commonly injured ligament after inversion ankle sprains is the:

a. Anterior tibiofibular ligament
b. Calcaneofibular ligament
c. Anterior talofibular ligament
d. Posterior talofibular ligament
e. Deltoid ligament .

Q27: The most significant symptom of the deformity seen in the photo below is:

a. Ugly shape.
b. Weakness of the left upper limb.
c. Diplopia.
d. Respiratory insufficiency.
e. Spinal cord traction.

Q28: A Tillaux fracture of the distal tibia is the result of what mechanism of injury:

a. Supination
b. Pronation
c. Dorsiflexion
d. External rotation
e. Internal rotation

Q29: Closed tibia fractures with an intact fibula treated with casting or cast bracing are most often complicated by which of the following:

a. Reflex sympathetic dystrophy syndrome.
b. Varus malunion.

c. Valgus malunion.
d. Infection.
e. Pulmonary embolism.

Q30: An 18-year-old woman arrives in your office 3 years after sustaining a comminuted right femur fracture treated with intramedullary (IM) nail fixation. She is complaining of moderate low back pain. On physical examination, you note that she has an 8-cm leg length discrepancy, and radiographs confirm that the right femur has healed 8 cm short. The most appropriate treatment at this point is:

a. Shoe lift on the right.
b. Limb lengthening of the right femur.
c. Limb shortening of the left femur.
d. Observation.
e. Left leg epiphysiodesis.

Q31: All of the following increase absorption of calcium from upper small intestine except:

a. Vitamin D.
b. Parathyroid hormone.
c. Acidic Phosphatase.
d. Alkaline Phosphatase.
e. Bile salts.

Q32: One of the following types of graft has the best osteoconductive properties:

a. Cancellous autograft.
b. Cortical autograft.
c. Bone marrow.
d. Demineralized bone matrix.
e. Allograft.

Q33: One of the following factors is characteristic of intermediate changes seen in the articular cartilage of a patient with osteoarthritis:

a. Decrease in water content.
b. Decrease in the quantity of DNA per unit tissue.
c. Increase in proteoglycan aggregation.
d. Increase in relative collagen concentration.
e. Increase in chondroitin sulfate concentration.

Q34: A 5-year-old male patient presented to the emergency room complaining of limping and pain in the right knee with low grade fever. By clinical examination and ultrasound there was limitation of movements, tenderness and minimal effusion of the right hip. The cause of feeling pain in the knee is:

a. Radiating pain along the anterior branch of the Obturator nerve.
b. Radiating pain along the Saphenous nerve.
c. Radiating pain along the Tibial branch of the sciatic nerve.
d. Radiating pain along the Femoral nerve.
e. Radiating pain along the Femoral branch of the Genito femoral nerve.

Q35: When placing a retractor beneath the transverse acetabulr ligament during total hip arthroplasty, the structure at risk of injury is:

a. Medial femoral circumflex artery.
b. Lateral femoral circumflex artery.
c. Obturator artery.
d. Femoral nerve.
e. Sciatic nerve.

Q36: An 18-year-old male who is a cross-country runner complains of groin pain with activities. Hip X-Ray is normal, but a technetium bone scan shows focal increase uptake at the medial femoral neck. Recommended initial treatment is:

a. Shoewear modification.
b. Femoral head core decompression.
c. Non- weight bearing.
d. Multiple screw fixation.
e. Electrical stimulation.

Q37: A 14-year-old girl who is a gymnast complains of increasing lower back pain. There has been no specific trauma, other than her normal workouts and competition. On examination, pain is produced with flexion and extension. Neurological examination is normal. The most likely diagnosis is:

a. Disk herniation.
b. Traumatic spondylolysis.
c. Dysplastic spondylolysis.
d. Spinal cord tumor.
e. Vertebral osteomyelitis.

Q38: A 16-year-old boy sustains an anterior shoulder dislocation during football game. The shoulder is reduced and the arm is placed in a sling. The factor most likely to determine the incidence of recurrent shoulder dislocation is:

a. Length of time the remains in the sling.
b. The amount of force causing dislocation.
c. Return of shoulder muscle strength after rehabilitation.

d. Direction of initial force.
e. Age of the patient at first dislocation.

Q39: Main cause of pain in acute osteomyelitis is:

a. increase intraoseuos pressure.
b. bone necrosis.
c. periosteal irritation.
d. Fracture.
e. soft tissue abscess.

Q40: One of the following conditions demonstrates normal bone mineralization:

a. Osteomalacia.
b. Rickets.
c. Osteoporosis.
d. Osteopetrosis.
e. Renal osteodystrophy.

Q41: Fibrocartilage is typically present in all of the following except

a. intervertebral disc
b. symphysis pubis
c. menisci
d. end of ribs
e. Sternoclavicular Joint.

Q42: All of the following are true regarding peripheral nerve injury, except:

a. Axonotemesis shows injury to perineureum
b. Neurotemesis is usually a result of sharp injury
c. Neuropraxia may occur with traction injury
d. Axonotemesis is usually a result of traction injury
e. Neurotemesis carries the worst prognosis

Q43: Relative and absolute contraindication for external fixation to control bleeding with pelvic fracture include all of the following except

a. Stable fracture pattern
b. Posterior element fracture associated with floating iliac wing fracture
c. Posterior element fracture associated with ipsilateral acetabular fracture
d. Proven arterial injury
e. Head injury

Q44: Protrusio acetabuli is caused by all of the following except:

a. Familial tendency.
b. Rheumatoid arthritis.
c. Cushing's syndrome.

d. Osteomalacia.
e. Paget's disease.

Q45: An 8-year-old boy is seen for follow-up after undergoing a closed reduction of a Salter-Harris type II fracture of the distal radius 16 days ago. Radiographs show approximately 30° of dorsal angulation. Clinically he has a prominent distal ulna, but lacks only 15° of supination. Treatment should consist of:

a. Open reduction and pinning.
b. No manipulation and a molded short arm cast.
c. Repeat closed reduction and pinning.
d. External fixation.
e. Open reduction and short arm casting.

Q46: A 28 year old female patient who is 30 weeks pregnant complains of sever groin pain radiating to the right knee, increased by activity and relieved by rest, there was no history of trauma, Transient osteoporosis is suspected. The best test to prove the diagnosis is:

a. CT scan of pelvis and hips.
b. Three phase bone scan.
c. Dexa Scan.
d. Hip arthroscopy.
e. MRI of the pelvis and hips.

Q47: The severity of club foot (CTEV) is characterized by the presence of all the following except:

a. Calf atrophy.
b. Curved lateral border.
c. Cavus.
d. Fixed equinus.
e. Anterior displacement of the fibula.

Q48: A patient sustained a closed transverse fracture of the distal quarter of the tibia. Treatment consisting of interlocking intramedullary nailing was performed, resulting in nonunion. What is the most appropriate revision strategy?

a. Removal of the distal locking screws.
b. Removal of the distal locking screws and a fibulectomy.
c. Removal of the proximal locking screws.
d. Exchange reamed interlocking nailing.
e. Removal of the nail and plate osteosynthesis.

Q49: A 7- year- old boy is seen in the emergency department with an isolated and displaced supracondylar humerus fracture and absent radial and ulnar pulses. Despite a moderately painful attempt at realignment examination reveals that his hand remains pulseless what is the next most appropriate step in management?

a. Order an urgent angiogram and then proceed to the OR.
b. Repeat the reduction in the emergency department and reassess.
c. Perform open reduction through an anterior approach.
d. Perform closed reduction and pinning in the OR and reassess the vascular status.
e. Perform arterial repair and then stabilized the fracture.

Q50: A 70 year old female patient with intertrochanteric hip fracture treated with dynamic hip screw (DHS) developed varus deformity and cutting out of the lag screw, all are possible causes of this complication except :

a. Inability to obtain a stable fixation.
b. Severe osteopososis.
c. Inadequate screw barrel engagement that prevent sliding.
d. Placement of lag screw with a tip apex distance of 22 mm.
e. Excessive collapse of the fracture.

DDH Management

1. Regarding application of the Pavlik harness, which is incorrect?

a. Chest strap ... nipple line.

b. Anterior stirrup strap ... mid-axillary line.

c. Posterior stirrup strap ... line of scapula.

d. Hips should be flexed more than 110°

e. Forceful abduction is not allowed.

---

2. Contraindications to Pavlik harness application include the following except:

a. Arthrogryposis.

b. Myelomeningocele.

c. Ehlers-Danlos syndrome.

d. Age > 6 months.

e. Persistent dislocation after 3 weeks of harness use.

---

3. Factors causing failure of treatment of DDH with Pavlik harness include all except:

a. Wrong application of the harness.

b. Bilateral dislocations.

c. Inability to reduce the hip with manipulation.

d. Initial coverage less than 50% as determined by ultrasound.

e. Older age at time of initial treatment.

---

4. All the following are paired with their correct management except:

a. Inferior hip dislocation with Pavlik harness ... decreases flexion.

b. Unstable hip after 3 weeks of Pavlik harness ... abduction splint.

c. Teratologic hip dislocation ... open reduction.

d. No concentric closed reduction ... open reduction.

e. Quadriceps weakness with Pavlik harness ... decreases abduction.

---

5. Regarding open reduction for DDH, all are correct except:

a. The age limit for surgery for bilateral disease is 6 years.

b. The Spica applied after surgery should be in 30° of abduction.

c. When performing femoral shortening, an adductor tenotomy is not necessary.

d. Indicated for teratologic hip dislocations.

e. Follow-up the patient after surgery for three years.

Failure to achieve reduction of a dislocated hip in an otherwise healthy 6 month old infant following 4 weeks in a Pavlik harness with the hips flexed to 90 degrees and abduction of 50 degrees is best treated with which of the following?

1. Adjusting the harness to 75 degrees of abduction and maintaing 90 degrees of hip flexion

2. Adjusting the harness to 75 degrees of abduction and increasing hip flexion to 120 degrees

3. Closed reduction with hip arthrogram, adductor tenotomy if necessary, and hip spica casting

4. Open reduction and femoral shortening osteotomy

5. Open reduction, femoral shortening osteotomy, and pelvic acetabular osteotomy

Fibrous dysplasia

All of the following are characteristic of McCune-Albright syndrome EXCEPT?

1. Caused by a mutation in G(s)alpha subunit
2. Cafe-au-lait spots
3. Polyostotic fibrous dysplasia
4. **Multiple neurofibromas**
5. Precocious puberty

A mutation in a G(s) alpha protein (activating G protein that increases cAMP) results in which of the following diseases?

1. **Fibrous dysplasia**
2. Diastrophic dysplasia
3. Cleidocranialdysostosis
4. Osteogenesisimperfecta
5. Achondroplasia

A genetic abnormality in the cyclic AMP signaling pathway is involved in which of the following conditions?

1. achondroplasia
2. hypochondroplasia
3. multiple hereditary exostosis
4. **fibrous dysplasia**
5. neurofibromatosis type I

LBP in children

In pediatric discitis, which of the following is the most accurate description of the radiographic findings.

1. The earliest radiographic finding is loss of normal lumbar lordosis, followed by disc space narrowing and endplate erosion.

2. The earliest radiographic finding is disc space narrowing, followed by endplate erosion and loss or normal lumbar lordosis.

3. The earliest radiographic finding is endplate erosion, followed by disc space narrowing and loss or normal lumbar lordosis.

4. The earliest radiographic finding is scalloping of the inferior endplate, followed by disc space narrowing and endplate erosion.

5. The earliest radiographic finding is vertebra magna, followed by disc space narrowing and endplate erosion.

A 14-year-old soccer player has a history of intermittent low back pain. He reports for the last 4 months he has had no symptoms or limitations in his athletic activity. Treatment should include?

1. a thoracolumbar orthosis

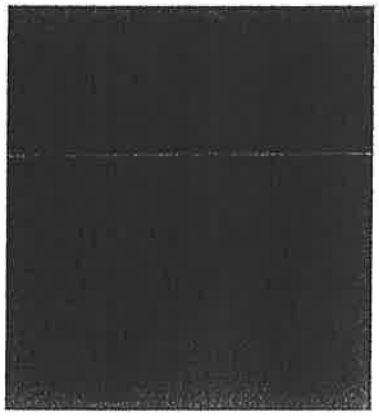
2. in situ L5-S1 bilateral posterolateral fusion

3. repair of pars defect wih screw fixation

4. limitation of athletic activity

5. observation with no restriction of physical activity

A 13-year-old gymnast reports the acute onset of low back pain that began four weeks ago. Radiographs are unremarkable. A single-photon-emission-computer-tomography (SPECT) is shown in Figure A. Initial treatment should consist of? FIGURES: A



1. **Bracing with a molded lumbosacral orthosis**
2. Aggressive physical therapy
3. CT guided biopsy
4. In-situ posterolateral fusion of L5-S1
5. Epidural steroid injection

A 12-year-old gymnast has had progressive low back and buttock pain refractory to conservative management for two years. A sagittal MRI is shown in Figure A. Surgical management with reduction of L5 on S1 would most likely lead to which of the following neurologic complications? FIGURES: A

1. Decreased patellar reflexes
2. Weakness to hip flexion
3. **Weakness to great toe extension**
4. Weakness to knee extension
5. Weakness to ankle plantar flexion

All of the following are RED FLAGS in low back pain in children except :

1. Increasing pain

2. No response to appropriate therapy after 2 months

3. Pain wakes child from sleep

4. Weight loss

5. > 4 yrs old

Pediatric elbow injury

What is the advantage of medial and lateral crossed pins compared to two lateral pins in the treatment of supracondylar humerus fractures? Review Topic

1. Greater ultimate clinical arc of elbow motion

2. Lower revision rate

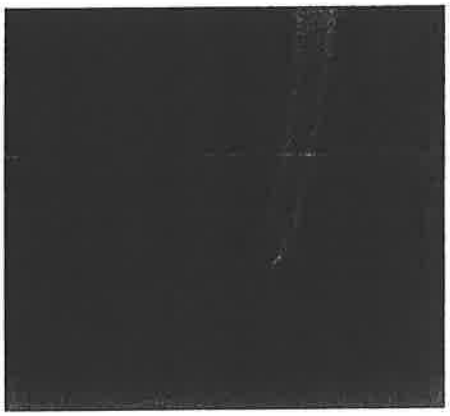
3. Lower incidence of ulnar nerve injury

4. **Greater experimental biomechanical stability**

5. More anatomic fracture reduction

A 7-year-old boy falls off the playground and sustains the injury shown in figure A. What motor deficit is associated with the neurologic injury most common to this fracture pattern? Review Topic

FIGURES: A



1. Weakness of the flexor digitorumprofundis to the index finger
2. Weakness of the extensor pollicislongus
3. Wrist drop
4. Weakness of the flexor pollicislongus
5. **Hand intrinsic weakness**

What is the cause of cubitusvarus after a supracondylar humerus fracture in a child?

1. Overgrowth of the lateral physis
2. **Malunion of the fracture**
3. Growth arrest of medial physis
4. Injury to the ulnar nerve
5. Radial head dislocation

Which of the following elbow apophyses is the last to fuse during growth?

1. Capitellum
2. External (lateral) epicondyle
3. Radial head
4. **Internal (medial) epicondyle**
5. Trochlea

Nonunion following a pediatric lateral condyle fracture has been associated with which of the following? Review Topic

1. **Ulnar nerve palsy**
2. Radial nerve palsy
3. Heterotopic ossification
4. Parsonage Turner syndrome
5. Cubitusvarus

THR approach

What two nerves make up the internervous plane in the Smith-Petersen anterior hip approach?

1. There is no internervous plane
2. Femoral nerve and inferior gluteal nerve
3. **Femoral nerve and superior gluteal nerve**
4. Obturator nerve and superior gluteal nerve
5. Obturator nerve and inferior gluteal nerve

Which of the following approaches for total hip arthroplasty is reported to have the lowest prosthetic dislocation rate? Review Topic

1. Posterior approach with posterior soft tissue repair
2. Anterolateral (Watson Jones)
3. **Direct lateral (Hardinge)**
4. Transtrochanteric
5. Posterior approach without posterior soft tissue repair

The medial femoral circumflex artery and first perforating branch of the profundafemoris artery anastamose at which of the following locations? Review Topic

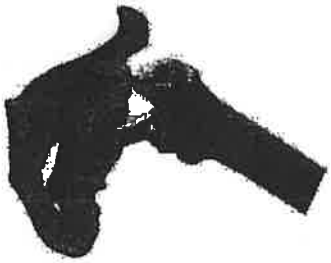
1. Medial to the gluteus medius insertion
2. **Medial to the gluteus maximus insertion**
3. Anterior to the adductor magnus
4. Within the gluteus minimus muscle belly
5. Medial to the ischial tuberosity

In order to determine the boundaries of the posterior-superior safe zone for acetabular screw placement during THA, a line is initially drawn through which of the following two anatomic landmarks, represented by dots on the illustration?

FIGURES: A

1. **A and C**
2. B and C
3. D and C
4. C and E
5. A and E

A 67-year-old female underwent a total hip arthroplasty 6 months ago and has had recurrent prosthetic dislocations. Figure A is a representative drawing of the mechanism of her dislocation. During the time of surgery what is the most likely factor leading to the bone-on-bone impingement?



1. Lateralizing the acetabular cup
2. **Decreased femoral offset**
3. Increased femoral offset
4. Increased acetabular inclination (>55 degrees)
5. Small head-neck ratio (<2)

ACETABULAR FRACTURES

1- THE MOST COMMON ACETABULAR # IS
   a- ant. wall
   b- post. Wall.
   c- Ant. column
   d- Post. Column
   e- Both column

Answer --- b

2- The most commonly injured nerve in Acetabular # is

   a- sciatic N

   b- femoral N

   c- sup. Gluteal N

   d- inf. Gluteal N

   e- pudendal N

Answer ---- A

3- The most appropriate approach for simple post. Wall # is

   a- ilioinguinal
   b- iliofemoral
   c- kocher langenbeck
   d- extended iliofemoral
   e- double approach

Answer --- C

4- The following are indication for surgery in acetabular # except

a- irreducible hip dislocation
b- loose body in the joint
c- sciatic nerve palsy post reduction
d- Post. Wall # >40%
e- Both column # with secondary congruency

Answer --- E

5- CT-Scan showing a split fracture in the coronal plane indicate

a- wall #
b- column #
c- Transverse#
d- T-shaped #
e- Non of the above

Answer --- b

Pelvic fractures

1-A 34-year-old female presents to the trauma bay with hemodynamic instability following a motor vehicle collision. A chest radiograph shows a left-sided hemothorax and her pelvis radiograph is shows an unstable APC injury. Which of the following is the next most appropriate step in managment?

1. ☐ **Circumferential pelvic sheeting**
2. ☐ **Retrograde urethrogram to evaluate for associated urologic injury**
3. ☐ **Emergent transport to OR for pelvic anterior external fixator placement**
4. ☐ **CT scan to assess for occult femoral neck fracture**
5. ☐ **Bedside posterior pelvic C-clamp application**

Answer:1

2-Of all the pelvic ring injury types, anteroposterior compression type III pelvic ring injuries have the highest rate of which of the following?

1. ☐ **Head injury**
2. ☐ **Pulmonary injury**
3. ☐ **Traumatic amputation**

4. ☐ **Need for transfusion**

5. ☐ **Upper extremity fractures**

Answer:4

3-A 23-year-old male is an unrestrained driver in a motor vehicle accident and sustains an operative pelvic ring fracture. During fluoroscopic-aided fixation, which of the following techniques is most aided by the lateral sacral view?

1. ☐ **Anterior column percutaneous screw placement**
2. ☐ **Posterior column percutaneous screw placement**
3. ☐ **Pubic symphysis plating**
4. ☐ Supra-acetabular pin placement
5. ☐ Percutaneous iliosacral screw placement

Answer:5

Fibular hemimelia

1-Which one of the following is the most common type of longitudinal lower limb deficiency?

a- Fibular hemimelia
b- Complete hemimelia
c- Tibial hemimelia
d- Proximal focal femoral deficiency
e- Phocomelia

2- Which one of the following is TRUE about fibular hemimelia?

a- Always an intercalary deficiency
b- Always a terminal deficiency
c- Always a pre-axial deficiency
d- Can be either pre-axial or paraxial deficiency
e- Can be either terminal or intercalary deficiency

3-According to Achterman and Kalamchi classification , complete absence of the fibula is considered

a- Type IA
b- Type IB
c- Type II
d- Type III
e- Type IV

4- Partial absence of the fibula (fibular hemimelia) is associated with all of the following except:

a- Genu varum
b- Genu valgum
c- ACL deficiency
d- Femur shortening
e- Tarsal coalition

5- Complete fibular hemimelia is associated with:

a- Anterolateral bowing
b- Anteromedial bowing
c- Posterolateral bowing
d- Posteromedial bowing
e- Medial bowing

Answers: 1-a, 2-e , 3-c , 4-a , 5- a

Scoliosis

1-What is the most common type of physiotherapy for scoliosis?
a) Schroth therapy
b) Craniosacral therapy
c) Spiral dynamics
d) Proprioceptive neuromuscular facilitation therapy
e) Meridian therapy

2- How high is the probability that a 16-year-old boy with adolescent idiopathic scoliosis will suffer a neurological complication from corrective surgery?
a) <0.1%
b) 0.1% to 2%
c) 2% to 4%
d) 4% to 6%
e) >6%

3- What can be said about preventing scoliosis?
a) Swimming prevents the development of scoliosis.
b) Swimming lessens the severity of scoliosis.
c) Bicycling on a low seat improves scoliosis.
d) There is no way to prevent the development of scoliosis.
e) The forward-bending test has a high predictive value when used to screen schoolchildren for scoliosis.

4-An 11-year-old girl has idiopathic scoliosis measuring 15°. How often should she be re seen in outpatient follow-up?
a) Every 2 months
b) Every 4 to 6 months

c) Every 8 to 10 months
d) Every 12 to 18 months
e) Every 18 to 24 months

5- **What is the long-term prognosis for a 21-year-old woman with idiopathic scoliosis measuring 60° with respect to her quality of life?**
a) If she does not undergo surgery, it is more likely than not that she will be wheelchair-dependent by age 70.
b) If she does not undergo surgery, it is more likely than not that she will die of cor pulmonale by age 70.
c) If she undergoes surgery, it is more likely than not that she will be unable to bear children by spontaneous vaginal delivery.
d) If she does not undergo surgery, it is more likely than not that she will be unable to bear children by spontaneous vaginal delivery.
e) If she does not undergo surgery, her quality of life at age 40 will be practically unimpaired in comparison to that of women of the same age without scoliosis.

Ansewrs : 1-a ,2-b , 3-d , 4-b , 5-e

shoulder dislocation and instability

1- regarding acute shoulder dislocations , all are true except:

a- the AP radiograph is the most important x-ray in assessing the presence and direction of a glenohumeral dislocation

b- in posterior dislocation the arm is held in an adducted and internally rotated position

c- palpable distal pulses may be present despite an injury to the axillary artery

d- seizure disorders are associated with posterior dislocation

e- rotator cuff tears in association with dislocation increases in incidence with older age

2- the procedure of choice for multidirectional instability of the shoulder is

a- Bankart repair

b- plication of the subscapularis

c- reefing of the capsule in the direction of most significant instability

d- inferior capsular and inferior glenohumeral ligaments repair

e- Caspari multiple suture repair

3- the most diagnostic sign of anterior shoulder instability is

a- apprehension sign

b- drop arm sign

c- impingement sign

d- sulcus sign

e- lift off sign

4- all are indications for surgical rather than conservative treatment for recurrent shoulder dislocation except

a- history of trauma

b- unilateral

c- multidirectional

d- Bankart lesion

e- young age

5- regarding shoulder stability , one is correct

a- the glenoid articulates with approximately 25-30% of the humeral head at any given time

b- the negative pressure effect acts to limit inferior translation in the adducted arm at rest

c- the glenoid labrum extends the load bearing area of the glenoid and increases its depth as much as 50%

d- the inferior glenohumeral ligament is the primary stabilizer against anterior instability in the adducted arm

e- the superior glenohumeral ligament acts as a restraint to excessive inferior translation in the adducted arm

answers 1-a 2-d 3-a 4-c 5-d

TKR:-

1-The use of vancomycin impregnated bone cement during total knee arthroplasty is most strongly recommended for which of the following patients?

1. 68-year-old male undergoing second stage of revision arthroplasty for deep infection

2. Primary TKA in a 55-year-old female with BMI of 40

3. Primary TKA in a diabetic 70-year-old male

4. 67-year-old male with posttraumatic arthritis and retained hardware undergoing primary TKA

5. 53-year-old female with rheumatoid arthritis undergoing primary TKA

2- During a minimally invasive total knee arthroplasty with a quadriceps-sparing approach, the exposure is found to be limited and causing difficulties with jig alignment. What is the optimal next step?

1. Conversion of the exposure to a subvastus approach

2. Tibial tubercle osteotomy

3. Conversion of the exposure to a two-incision approach

4. Conversion of the exposure to a standard parapatellar arthrotomy

5. Ligament release to improve exposure

3- A 45-year-old woman is scheduled to undergo a TKA. Which of the following implant designs theoretically reduces poylethylene wear and reduces bone-implant-interface stress?

1.Mobile-bearing TKA

2. Posterior stabilized fixed bearing TKA

3. Cruciate retaining fixed bearing TKA

4. Constrained TKA

5. Mobile-bearing hinged TKA

4- Performing an isolated release of the popliteus tendon during a total knee arthroplasty is most appropriate in which of the following scenarios?

1.Valgus deformity that is tight in extension

2. Varus deformity that is tight in extension

3. Valgus deformity that is tight in flexion

4. Valgus deformity that is tight in both flexion and extension

5. Varus deformity that is tight in flexion

5- When performing a total knee arthroplasty, the knee is stable at full extension, but it will not flex past 90 degrees. Which of the following adjustments can achieve satisfactory range of motion and stability in flexion and extension?

1. Downsizing the tibial insert

2. Placing posterior femoral augments

3. Resecting more distal femur

4. Downsizing the femoral component

5. Performing a medial tibial reduction osteotomy

ANSWRS:-

1-1

2-4

3-1

4-3

5-4

Trigger finger & de Quervain's tenosynovitis

1- During surgical release of trigger thumb which structure is most likely to be injured :

a- **Princeps pollicis artery**
b- **Ulnar digital nerve**
c- **Oblique pulley**
d- **Ulnar digital artery**
e- **Radial digital nerve**

E

2- Which of the following structures are implicated in the pathogenesis of trigger finger:

a- **Extensor digitorum tendon**
b- **Grayson's ligament**
c- **Oblique retinacular ligament**
d- **A1 pulley**
e- **Transverse carpal ligament**

D

3- de Quervain's tenosynovitis is differentiated from 1st CMC joint arthritis using the:

a- history
b- grind test
c- Finkelstein test
d- Watson test
e- Skin changes

B

4- Most important pulley of the finger is

a- A1
b- A2
c- C2
d- A3
e- C1

B

5- Which of the following dorsal wrist compartments is incorrectly paired with its contents?

a- Compartment 6: Extensor carpi ulnaris
b- Compartment 5: Extensor digiti minimi
c- Compartment 4: Extensor digiti communis, posterior interosseous nerve
d- Compartment 3: Extensor pollicus longus, extensor carpi radialis longus

e- Compartment 1: Abductor pollicus longus, extensor pollicus brevis

B

Intertrochantric #

1- Which of the following methods accurately describes the measurement of tip-apex-distance as it relates to placement of a lag screw in the femoral head?
   a- Summation of the distance between the end of the screw and the apex of the femoral head on AP and lateral radiographs
   b- Distance from the acetabular teardrop to the tip of the screw on an AP radiograph of the hip
   c- Multiplication of the distance between the end of the screw and the apex of the femoral head on AP and lateral radiographs
   d- Distance from the center of the lesser trochanter to the tip of the screw on an AP hip radiograph
   e- Summation of the distance between the tip of the greater trochanter and end of the screw on AP and lateral hip radiographs

A

2- Which of the following factors has been shown to be the strongest predictor of screw cutout of a dynamic compression hip screw used for an intertrochanteric femur fracture?
   a- Age of the patient
   b- Intrinsic stability of the fracture
   c- Tip-apex distance
   d- Quality of reduction
   e- Angle of the sideplate

C

3- Anterior perforation of the distal femur from antegrade femoral nailing has been attributed to what factor?
   a- Non-anatomic reduction
   b- Mismatch of the radius of curvature of implant and bone
   c- Usage of too large an implant
   d- Lateral patient positioning
   e- Lateral proximal starting point

B

4- Which of the following is a recognized predictor of mortality after hip fracture?
   a- American Society of Anesthesiologist (ASA) classification
   b- Post-operative weight bearing status
   c- Fracture comminution
   d- Fixation device used
   e- Hip fracture type

A

5.When treating a stable 2-part intertrochanteric hip fracture with a sliding hip screw construct, what is the minimum amount of screw holes that are needed in the side plate for successful fixation?

a- One
b- Two
c- Three
d- Four
e- Five

B

Cemented vs cementless THR

1- What is the range of pore size of cementless porous implants to allow for optimal bony ingrowth?
   a- Less than 1 micron
   b- 50 to 400 microns
   c- 1,000 to 5,000 microns
   d- 10,000 to 50,000 microns
   e- 100,000 to 500,000 microns

   B

2- Osteopenia has what effect on the strength of the bone-cement interface in comparison to normal bone?
   a- no effect
   b- improved mechanical integrity (higher fracture resistance)
   c- diminished mechanical integrity (low fracture resistance)
   d- reduced depth of cement penetration into bone
   e- less affected by cement pressurization

   B

3- All of the following features of metal-on-metal total hip arthroplasty allows for improved fluid film lubrication between the components EXCEPT:
   a- Larger femoral head
   b- Slight clearance of fit between the acetabular cup and the femoral head
   c- Minimal surface roughness of the femoral head
   d- Complete congruence of fit between the acetabular cup and the femoral head.
   e- Minimal surface roughness of the acetabular cup

D

4- All of the following are true for a patient who underwent a metal-on-metal total hip arthroplasty (THA) EXCEPT?
   a- they will have production of ionically charged wear particles
   b- there is a higher cancer risk than with metal-on-polyethylene THA
   c- they will have elevated levels of cobalt and chromium in the serum
   d- they will have elevated levels of cobalt and chromium in the urine
   e- there is a higher frictional torque than with ceramic on ceramic THA

Acute osteomyelitis

1- Which of the following joints metaphyseal osteomyelitis is least likely to present with joint effusion :
   A- Hip
   B- Knee
   C- Shoulder
   D- Elbow
   E- Ankle

B

2- All true about acute osteomyelitis except:
   a- Blood cultures are only +ve in 50% of cases
   b- WBC is poorly correlated with treatment
   c- Decreased T1 signal on MRI
   d- ESR is better than CRP to monitor progress
   e- Group B strep is most common organism is neonates

D

3- A pediatric patient has just been diagnosed with osteomyelitis of the femur. All of the following are risk factors for the development of deep venous thrombosis EXCEPT:
   a- Surgical treatment of osteomyelitis
   b- CRP > 6
   c- Methicillin-resistant staphylococcus aureus
   d- Fever of greater than 38.5 degrees Celsius
   e- Patient age greater than 8-years-old

D

4- Regarding vertebral osteomyelitis which is true:
   a- Surgical treatment is required in 50% of cases
   b- Less than 1% present with neurological deficit

c- WBC is only elevated in about 50% of cases
d- Blood cultures not sent routinely
e- indium 111 labeled scan is highly sensitive

C

5- A 7-year-old boy complains of worsening left knee pain over the last 2 weeks. He has been unable to bear weight through the left lower extremity for the past 24 hours. The knee and lower leg are warm and tender to palpation. Current temperature is 38.2 degrees, and CRP is 11 mg/dL . A joint aspiration yields 2 mL's of synovial fluid demonstrating a cell count of 2,500 and no organisms on gram stain. Which of the following is the most appropriate next step in management :

a- Repeat aspiration of the left knee
b- Observation with repeat radiographs in one week
c- Magnetic resonance imaging (MRI)
d- Begin intravenous broad-spectrum antibiotics and obtain an infectiouse disease consult
e- Exploratory surgical arthrotomy

C

Osteoarthritis

1- Which is true in osteoarthritis:
a- Proteoglycan content increased
b- Keratin sulphate concentration increased
c- Chondroitin 4-sulphate decreased
d- Modulus of elasticity increased
e- Water content increased

E

2- he structure of cartilage proteoglycans can be described as
a- multiple hyaluronate molecules bound to core protein, which is subsequently bound to a glycosaminoglycan chain.
b- multiple glycosaminoglycan chains bound to hyaluronate, which is subsequently bound to core protein.
c- multiple glycosaminoglycans bound to core protein, which is subsequently bound to hyaluronate via a link protein.
d- multiple link proteins bound to core protein, which is subsequently bound to glycosaminoglycan.
e- multiple hyaluronate chains bound to link protein, which is subsequently bound to glycosaminoglycan.

C

3- which of the following osteoarthritis patterns associated with genetic mutation:
   a- those with high BMI
   b- knee OA
   c- hands and hips OA
   d- OA with decreased bone density
   e- hip OA in Africans

C

4- Which of the following biochemical changes are common to both aging cartilage and osteoarthritic (OA) cartilage:
   a- Increased water content
   b- Decreased proteoglycan content
   c- Decreased collagen content and decreased modulus of elasticity
   d- Increased chondroitin sulfate concentration
   e- Decreased keratin sulfate concentration

   B

5- Risk factors for development of osteoarthritis include all except:
   a- Female >male
   b- Increased BMI
   c- low bone density
   d- trauma
   e- age

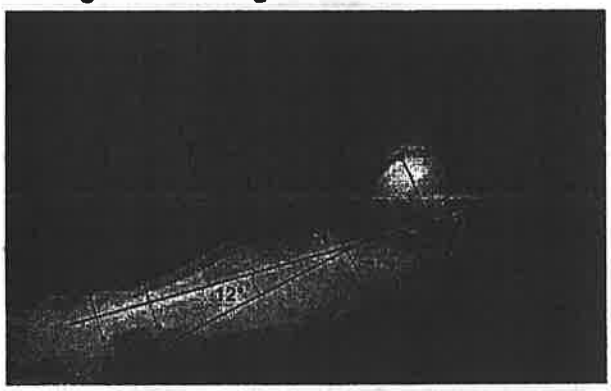
C

Pes planus

1- in evaluating pes planus, a normal meary's angle:
   a- 0
   b- 15
   c- 30
   d- 45
   e- 60

A

2- The angle shown in figure describes



a- Kite angle
b- calcaneal pitch
c- Southwick angle
d- lateral talocalcaneal angle
e- meary's angle

E

3- all true regarding tarsal coalition except:
a- calcaneonavicular bars are the most common.
b- Autosomal dominant inheritance has been proposed
c- MRI is the diagnostic test of choice
d- Symptoms of tarsal coalitions most commonly present in preadolescents or adolescents
e- Most respond well to non surgical management

C

4- One of the following not usually seen in congenital vertical talus:
a- dorsal dislocation of the talonavicular joint
b- contracture of the tendo-Achilles
c- rigid rocker-bottom appearance
d- ankle equines
e- adducted forefoot

E

5- The Evans lateral calcaneal lengthening osteotomy is the surgical procedure most appropriate for which pediatric foot deformity:
a- Talipes equinovarus
b- Cavus foot
c- Flexible pes planovalgus

d- Juvenile hallux valgus
e- Kohler's disease

C

Multiple myeloma

1- Lytic bone lesions, commonly seen in metastatic bone disease or multiple myeloma, are due to which of the following mechanisms:
a- RANK ligand secretion and action on neoplastic cells
b- RANK secretion and action on neoplastic cells
c- Osteoprotegrin secretion and action on osteoclastic cells
d- RANK ligand secretion and action on osteoclastic cells
e- RANK secretion and action on osteoclastic cells

D

2- Most common Antibody produced in myeloma:
a- IgA
b- IgD
c- IgE
d- IgG

D

3- Bence jones proteins are:
a- secreted immunoglobulin kappa and lambda light chains
b- secreted immunoglobulin heavy chains
c- intracellular denatured proteins
d- transcription factors
e- antigens

A

4- clock face organization of chromatin is seen in :
a- osteosarcoma
b- chondroma
c- multiple myeloma
d- chondroblastoma
e- sarcoma

C

5- all true regarding multiple myeloma except:
a- Solitary Plasmacytoma is resistant to radiation
b- show multiple "punched-out" lytic lesions
c- normal bone scan doesn't exclude MM
d- CD 38 +

e- cytotoxic chemotherapy combined with steroids is the mainstay of treatment

A

Ankle fracture

1 - In an isolated ankle syndesmotic injury, the fibula is unstable in the incisura fibularis of the tibia. In what direction is the fibula most unstable?

A. Anterior- posterior
B. Medial -lateral
C. Proximal -distal
D. Rotational
E. Equivalent instability in al axes

2- Following operative repair of lower extremity long bone and periarticular fractures, what is the time frame for patients to return to normal automobile braking time?

A. 6 weeks after initiation of weight bearing
B. 4 weeks post operative
C. 8 weeks from the date of injury
D. Once full range of motion of ankle exist
E. All the time of bony union

3 - Presence of diabetes-induced peripheral neuropathy has been shown to be an independent risk factor for postoperative complications of which of the following injuries?

A. Distal radius #
B. Patella #
C. Ankle #
D. Distal feomra #
E. Metatarsal #

4 - Lateral malleolus fractures can be treated with a variety of techniques, including posterior antiglide plating or lateral neutralization plating. What is an advantage of using lateral neutralization plating instead of posterior antiglide plating?

A. Decreased joint penetration of distal screws
B. Increased rigidity
C. Decreased need for delayed hardware removal
D. Decreased peroneal irritation
E. Improved distal fixation

Septic arthritis

1-An 8-day-old infant is admitted back to the hospital for septic arthritis of the hip. Which of the following will most likely be the causative organism by culture?

A. Group b streptococcus
B. Staph. Aureus

C. **Staph epidermidis**
D. **H. Influenza**
E. **N. gonorrhea**

2-An 8-month old infant is brought by his parents to your office for fever and malaise. Your inspection of the patient shows flexion ,abduction and external rotation of right hip . An oral temperature of greater than 38.5 has been found to be the best predictor of this child's condition. What is the second best predictor?

A. Elevated neutrophils
B. Elevated ESR
C. Elevated CRP
D. Elevated RF
E. Presence of bacteria on gram stain

3-In differentiating pediatric septic hip from transient synovitis, an elevated elevated ESR (>40), history of fever, refusal to bear weight and what other finding has been identified as predictive of a septic hip?

A. Elevated absolute neutrophilic count
B. WBC > 12,000 /mm3
C. Positive blood cultures
D. Pain with hip extension
E. Symptoms more than 3 days

4-A 45-year-old IV drug abuser has sternoclavicular (SC) joint pain for the past 2 weeks. He is afebrile and physical exam findings include point tenderness and swelling. He most likely has septic arthritis of the sternoclavicular joint. If so, what is the most likely infecting organism?

A. Strep. Pneumonia
B. Staph. Aureus
C. Pseudomonas auroginosa
D. Staph. epidermidis
E. Mycobacterium tuberculosis

Clubfoot

1-A 3-week-old infant presents with the unilateral club foot deformity. All of the following are key concepts for treatment of this deformity with manipulation and serial casting EXCEPT:

A. Foot is supinated an not pronated
B. Lateral pressure is limited to talar neck
C. Achillis tenotomy is done before the fina; cast to correct equines
D. Weekly cast changes
E. The last cast is applied with foot abduction in 30 deg.

2-A 16-year-old female complains of foot pain with ambulation. She previously underwent clubfoot soft tissue releases at 5 months of age. Each of the following are complications or late deformities associated with clubfoot surgery EXCEPT:

A. Dorsal bunion
B. Osteonecrosis of talus
C. Rigid pes planus
D. Tarsal tunnel syndrome
E. Intoeing gait

3- A 3-year-old boy has been treated in the past with Ponseti casting now presents with dynamic supination during gait. You're planning to perform an anterior tibialis transfer to the lateral cuneiform. All of the following are true EXCEPT:

A. This transfer is required in 10 to 30 % of cases
B. Weal peroneals are counteracted by overpull of anterior tibialis
C. Grade 4 or 5 of anterior tibialis is required before transfer
D. Subtalar rigidity supplements the transfer
E. Dynamic supination includes foot supination during swing phase and landing on the lateral foot border during stance phase

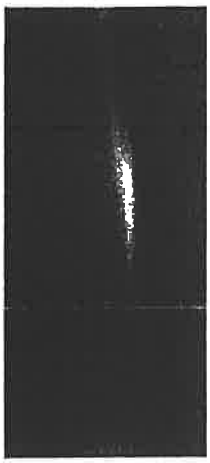
4- In patients with clubfeet treated with soft-tissue release, which of the following variables shows the greatest correlation with long-term functional impairment:

A. Extent of soft-tissue release
B. Subtalar joint function
C. Ankle joint function
D. Peroneal muscle function
E. Duration of cast treatment

Osteoid osteoma

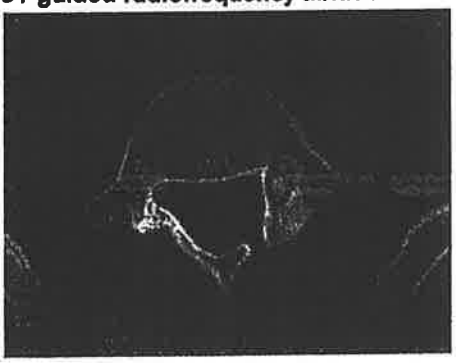
1- A 6-year-girl continues to complain of pain for 8 months in the mid-tibia region that persists despite a trial of nonsteroidal anti-inflammatory medications. The pain is severe enough that it limits her activities of daily living, such as going to school and sleeping. She is afebrile and laboratory studies, including an ESR, C-reactive protein, and CBC are within normal limits. Xray is shown below. What is the next step in management?

A. Observation with repeat radiographs in 6 months
B. Percutaneous radiofrequency ablation
C. Wide surgical resection
D. Chemotherapy
E. Broad spectrum parenteral antibiotics for 6 weeks.



2-A 27-year-old male presents with an acute onset of low back and right leg pain following a water skiing accident two weeks ago. His physical exam shows no neurological deficits. Lumbar spine radiographs are normal. An axial CT scan are shown in Figure below. What is the first line of treatment?

A. Magnetic Resonance Imaging (MRI)
B. CT guided percutaneous biopsy
C. Open surgical curettage with chemical cauterization and cementing
D. Continued clinical observation
E. CT guided radiofrequency ablation



3- the most common site for an osteoid osteoma is:

A. Proximal femur
B. Distal femur
C. Proximal tibia
D. Proximal humerus
E. Posterior element of spine

4-all of the following describes pain in osteoid osteoma except:

A. Increase with time
B. Worse at night and drinking alcohol
C. Relieved by NSAID
D. May mimic arthritis when adjacent to a joint
E. Secondary to interleukin production

Sondylolisthesis

1-You are seeing a 28-year-old girl for lower back pain after she fell off a horse 2 days ago. She has no neurologic deficits. An axial CT scan are shown in Figure below. What is the most appropriate first line of treatment?

A. Observation, mobilization, and further treatment based on symptoms
B. Spinal casting and bed rest for 6 weeks
C. Thoracolumbosacral orthosis for 6-8 weeks
D. Open reduction and internal fixation
E. L5 to S1 posterior spinal fusion with instrumentation

2-A 60-year-old female presents with severe low back pain and pain and numbness in his buttocks with prolonged standing. His pain improves with forward bending. Lateral radiographs with flexion and extension reveal L4/5 spondylolisthesis with mobility. MRI shows significant spinal stenosis. Six months of nonoperative management, including epidural corticosteroid injections has failed. The next step in treatment should consist of?

A. Lumbar disc arthroplasty
B. Lumbar Microdiskectomy
C. Lumbar Decompression and fusion
D. Lumbar Decompression only
E. Lumbar Fusion only

3-the majority of adult isthmic spondylolisthesis occur at what level:

A. L1-l2
B. L3-l4
C. L5-S1
D. L2-l3
E. L4-l5

4-A 35-year-male presents with pain radiating down the left leg, worse in the anterior leg distal to the knee. On physical exam, he is unable to go from a sitting position to a standing position with a single leg on the left, whereas he has no difficulty on the right. His patellar reflex is absent on the left, and 2+ on the right. Which of the following clinical senarios would best produce this pattern of symptoms

A. Left L2-3 foraminal herniated nucleus pulposis
B. Left L4-5 central herniated nucleus pulposis
C. Left L4-5 paracentral herniated nucleus pulposis
D. Left L4-5 foraminal herniated nucleus pulposis
E. Left L5-S1 paracentral herniated nucleus pulposis

Adult scoliosis.....

All of the following are true about adult scoliosis EXCEPT:

a. Lateral deviation (>10^0) in an adult patient after 20 years of age
b. Mostly asymptomatic.
c. Most common symptom is sciatica
d. Males and females equally affected
e. Exists in 2 forms Denovo and residual types.
Answer C

All of the following are features of degenerative scoliotic curves EXCEPT:

a. Rigid curves, confined to lumbar spine
b. Painless motion
c. Gradual over decades
d. Loss of disc height, listhesis, sclerosis and osteophyte formation
e. Involves fewer vertebral segments
Answer B

Regarding sciatica of degenerative scoliosis , which sentence is true:

a. Can be due to central stenosis only.
b. Often corresponds to the concavity of the curve, especially at L4 or L5
c. Often corresponds to the convexity of the curve, especially at L4 or L5
d. Often corresponds to the convexity of the curve, especially at L3 or L4
e. Often corresponds to the concavity of the curve, especially at L3 or L4

Answer E

The most common complication of adult scoliosis surgery is

a.proximal junctional kyphosis

b. Infections

c. Pseudoarthrosis

d. Neurological injuries.

e. sagittal plane imbalance

Answer C

Regarding fusion to S1 , all are true EXCEPT:

A.Avoid subsequent degeneration of L5/S1

b. more correction of sagittal plane

c. more insufficiency sacral fractures.

d. decrease reoperation rate.

e. higher rate of pseudoarthrosis.

Answer D

Biomaterials....

All are true about stress-strain curves EXCEPT:

a. Describe material behavior, force-displacement and describe structural behavior
b. Converting force-displacement curve to a stress-strain curve is not always possible
c. **Stress** :force that a material is subjected to per unit of original area. (N/mm2)
d. **Strain:** amount of deformation the material experiences per unit of original length in response to stress
e. Material stiffness the ability to resist deformation of a material in the plastic zone.

Answer E

Which of the following material is characterized by self-passivation:

a.Titanium

b.Cobalt

c.Ceramics

d.Polyethelene

e.stainless-steel

Answer A

The amount of energy returned on release of a strain while the material is elastically deformed is the definition of:

a.Toughness

b.Endurance limit

c. Ductility

d. Fatigue

e. Reselience

Answer E

Decay of applied stress under conditions of constant strain is the definition of:

a.Creep

b. Stress-relaxation.

c.Isotropic material

d.Anisotropic material

e.Endurance limit.

Answer B

The correct order of increasing Young-modulus of elasticity is:

a.Tendon-cortical bone-cancellous bone-stainless steel-CoCr

b. Tendon-cortical bone-ceramics-stainless steel-CoCr

c.Tendon-cancellous bone-cortical bone-CoCr-Titanium.

d.Cancellous bone-titanium-stainless steel-CoCr-Ceramics.

e. Cancellous bone-titanium-CoCr-stainless steel-Ceramics.

Answer D

Bone is biomechanically weakest to resistance of which of the following forces:

a.Tension.

b.Compression.

c.Inertia

d. Centripetal .

e.Shear.

Answer E

Elbow dislocation and instability:

All of the following are true about elbow EXCEPT:

a. The elbow is one of the most congruous joints in the body
b. Anterior bundle of MCL is the most significant ligamentous component.
c. Anterior bundle of MCL is tighter in flexion
d. Transverse bundle of MCL has little stabilizing function to the elbow.
e. Lateral ulnar collateral ligament- LUCL is the primary lateral stabilizer of the elbow

Answer C

All of the followings are static stabilizer to the elbow EXCEPT:

a. Radial head.
b. Elbow flexors and extensors.
c. Anterior band of MCL
d. LUCL
e. Coronoid process

Answer B

All are true about elbow dislocation EXCEPT:

a. Most common type is the posterolateral type.
b. LCL fails first by avulsion of the radial origin.
c. MCL fails last depending on degree of energy
d. Associated Ext rotation of humerus
e. Closed reduction is facilitated by slight flexion

Answer B

Which component is most common to both simple and complex elbow dislocations

a. Radial head #
b. Radial Neck #.
c. Loss of terminal extension.
d. Coronoid tip #
e. Coronoid Base #

Answer C

All are true about posterolateral rotatory instability of the elbow EXCEPT:

a. Failure of ligaments is described by Hori's cycle.
b. LUCL is ruptured first.
c. Chair-rise test and lateral pivot shift are helpful in diagnosis
d. Best to reconstruct chronic injuries and repair acute injuries.
e. MCL is completely disrupted in stage IIIA.

Answer E

During which phase of the overhead throwing cycle is a pitcher most likely to rupture the medial ulnar collateral ligament complex of the elbow?

a. Follow-through
b. Ball release
c. Late-cocking/early acceleration
d. Early cocking
e. Wind up

Answer C

Pediatric hip injuries:

All are true about pediatric hip injuries are true EXCEPT:

a. caused by severe high-energy trauma
b. approximately 30% are associated with other major injuries.
c. Hip fractures in infants may be associated with child abuse
d. Proximal femur fractures are best described by Delbet classification.
e. The rule of joint decompression is clear and beneficial.

Answer E

All are true about proximal femur injuries in pediatrics are true EXCEPT:

a. Transphyseal # ... AVN 90-100%
b. Transcerviacla # ... AVN 50%
c. Type IV best managed by pediatric Sliding hip screw.
d. Type IV is the most common
e. Coxavara is a well-recognized complication of type III.

Answer D

Regarding of Ratliff classification of AVN of femur head following pediatric hip injury, one is TRUE

a. Type I partial involvement of the head
b. Type II results from generalized damage to one or more of the lateral epiphyseal vessels
c. Type III, an area of necrosis from the fracture line to the physis
d. Type III carries bad prognosis
e. Type I carries the best prognosis

Answer C

Managment of Hip fractures in children,one not true;

a. Anterolateral approach for surgery
b. Aviodpretapping before inserting screws to decrease the injury to the growth plate
c. Avoid crossing the physis if possible, but cross it if necessary for stability
d. One attempt only, if not successful, immediate ORIF with pins or screws
e. In young patients, internal fixation is removed 6 -12 months after fracture union to avoid growth of bone over the fixation

Answer B

Regarding blood supply of femur head in pediatric age , all are true EXCEPT:

a. Main blood supply to the head is lateral femoral circumflex artery.
b. Most susceptible age for AVN is 3-8 years
c. Artery of the ligamentumteres does not contribute until >8 years old
d. Metaphyseal vessels contribute to blood supply to the head < 3 years
e. The position of least intracapsular pressure is flexion, abduction and external rotation.

Answer A

Osteosarcoma

The most common location of osteosarcoma in decreasing frequencyis :

a. axial skeleton > distal femur > proximal tibia > proximal humerus
b. distal femur > proximal tibia > proximal humerus> axial skeleton
c. distal femur > axial skeleton > proximal tibia > proximal humerus
d. distal femur > proximal tibia > axial skeleton > proximal humerus
e. proximal tibia > distal femur > axial skeleton > proximal humerus

Answer B

All of the following are risk factors for disease progression and poor outcome in osteosarcoma EXCEPT:

a. High histology grade
b. Periosteal type
c. Large tumor size
d. 70% histologic tumor necrosis after pre-operative chemotherapy
e. Low serum alkaline phosohatase.

Answer E

All are true about Talengiectatic osteosarcoma EXCEPT:

a. Similar to classic osteosarcoma in genetics andsimilar in ABC in presentation

b. Accounts for 4% of osteosarcoma.
c. Less chemosensitive but same survival as intramedullary osteosarcoma
d. 25% present with pathologic fracture
e. expression of multi-drug resistance (MDR) gene portends very poor prognosis

Answer C

All of the followings are criteria for limb-sparing surgery in osteosarcoma are true EXEPT:

a. Adequate soft tissue coverage & muscle for functional power
b. Major vessels need to be preserved or reconstructed
c. Wide, tumor-free surgical margins (aim 5cm, acceptable 1-2 cm of normal marrow)
d. The ability to spare nerves
e. Immature skeletal age with predicted leg-length discrepancy less than 2cm.

Answer E

According to Enneking's staging system , a tumor that is invading the adjacent compartment, low grade with no evidence of mets is regarded as :

a. IB
b. IIB
c. IA
d. IIA
e. III

Answer A

Bone healing

The femur radiograph of a healthy 25-year-old female is compared to the femur radiograph of a healthy 85-year-old female. Which of the following best describes the 25-year-old's femur?

1. **Increased cortical thickness and a smaller medullary canal volume**
2. **Decreased cortical thickness and a larger medullary canal volume**
3. **Equivalent cortical thickness and medullary canal volume**
4. **Increased cortical thickness and larger medullary canal volume**
5. **Decreased cortical thickness and a smaller medullary canal volume**

Answer 1

A 25-year-old male sustains an transverse humeral shaft fracture and undergoes open reduction and internal fixation with rigid compression plating. What kind of bone healing would be expected with this type of fracture fixation

1. **Primary bone healing through haversian remodeling**
2. **Secondary healing through callus formation**
3. **Primary healing through callus formation**
4. **Endochondral ossification**
5. **Secondary healing through osteonal cutting cones**

Answer 1

Level 1 evidence has shown Low-intensity Pulsed Ultrasound Stimulation (LIPUS) decreased the time to fracture union in all of the the following injuries EXCEPT?

1. Radius shaft fracture
2. Distal radius fracture
3. Tibia shaft fracture treated with casting
4. Tibia shaft fracture treated with reamed intramedullary nailing
5. Scaphoid fracture

Answer 4

Which of the following statements regarding COX-2 is FALSE?

1. COX-2 knockout mice heal fractures more quickly than control mice
2. It causes mesenchymal stem cells to differentiate into osteoblasts
3. COX-2 is an enzyme which converts arachidonic acid to prostaglandin endoperoxide H2
4. NSAIDS non-specifically inhibit both COX-1 and COX-2 enzymes
5. The expression of COX-2 is upregulated in several human cancers

Answer 1

A hypertrophic nonunion will most likely unite by what intervention

1. Increased mechanical stability
2. Decreased mechanical stability
3. Increased biology at the fracture site
4. Decreased biology at the fracture site
5. Antibiotics and resection of pseudoarthrosis

Answer 1

What type of fracture healing occurs in a femoral shaft fracture treated with an intramedullary nail?

1. Primary fracture healing
2. Secondary fracture healing
3. Extramembranous ossification
4. Haversian remodelling
5. "cutting cone" remodelling

Answer 2

Scoliosis

A 13-year-old girl is referred to the orthopedic clinic for evaluation of scoliosis. She denies back pain and states she began her menses 3 months ago. On Adams forward bending, she measures 6 degrees. She has 5 of 5 motor strength in all muscles groups in her lower extremities and symmetric patellar and Achilles reflexes. On x-ray patient has rt sided thoracic curve with 18 degrees cubb angle. All of the following should be performed as part of her evaluation EXCEPT

1. Evaluation of leg lengths
2. Assessment of abdominal reflexes
3. Evaluation of waist asymmetry

4. Evaluation for café-au-lait spots
5. MRI

Answer 5

A 12-year-old female presents with a left thoracic rib prominence. Physical exam shows absent abdominal reflexes in the upper and lower quadrants on the left side, but present on the right. What is the next step in management?

1. Observation with repeat radiographs in 6 months
2. Bracing with a thoraco-lumbar-sacral orthosis
3. Magnetic resonance imaging (MRI)
4. Posterior spinal fusion with instrumentation
5. Anterior and posterior spinal fusion with instrumentation

Answer 3

When compared to normal controls, adults with untreated idiopathic scoliosis and a Cobb angle of greater than 60 degree at the time of skeletal maturity have a higher rate of which of the following?

1. Acute and chronic back pain
2. Premature death
3. Disability
4. Clinical depression
5. Limitation in activities of daily living

Answer 1

A 2-year-old girl presents to the office for evaluation of congenital scoliosis. What additional work-up should be done

1. HLA-B27
2. Echocardiography
3. Bone scan with SPECT images
4. Skeletal survey
5. Electromyogram

Answer 2

In patients with adult scoliosis requiring long thoracolumbar fusions, which of the following is the major advantage of extending the fusion to the sacrum as opposed to ending at L5

1. Improved function outcomes
2. Decreased pseudoarthosis rates
3. Decreased major medical complications
4. Improved correction and maintenance of sagittal balance
5. Improved curve correction in the coronal plane

Answer 4

Shoulder sport injuries

The superior glenohumeral ligament is under the greatest stress when the humeral head and arm are in which of the following positions?

1. Anteriorly translated with the arm in 90 degrees of abduction and externally rotated
2. Inferiorly translated with the arm in 5 degrees of adduction
3. Anteriorly translated with the arm in 90 degrees of abduction and internally rotated
4. Inferiorly translated with the arm in 45 degrees of abduction and internal rotation
5. Inferiorly translated with the arm in 90 degrees of abduction and neutral rotation

Answer 2

Besides the biceps tendon, which of the following structures also pass through the rotator interval?

1. The coracohumeral ligament only
2. The coracohumeral and superior glenohumeral ligaments
3. The coracohumeral, superior and middle glenohumeral ligaments
4. The superior and middle glenohumeral ligaments
5. The superior glenohumeral ligament only

Answer 2

Which of the following is true of the scapula during an overhead throwing motion

1. It maximally retracts on ball release
2. It protracts during late cocking to prevent impingment on the rotator cuff
3. It must rotate in the cocking and acceleration phases to prevent impingment on the rotator cuff
4. It must remain fixed during the throwing motion to impart maximal energy
5. It is has no effect on concavity-compression

Answer 3

Arthroscopic subacromial decompression with acromioplasty has been shown to yield lower subjective satisfaction scores in patients with which of the following preoperative factors

1. Dominant arm involvement
2. Males
3. Workers' compensation
4. Smokers
5. Age <60

Answer 3

A 26-year-old outfielder undergoes arthroscopic repair of a right shoulder type 2 SLAP tear with two labral anchors in the 11 and 1 o'clock positions. Postoperative rehabilitation for this SLAP repair should include:

1. Immediate full active range of motion that simulates sport-specific activities
2. Full-time sling wear with no active nor passive motion for at least 6 weeks until labral tissues heal
3. Rotator cuff strengthening by post-operative week two to prevent disuse atrophy and shoulder instability
4. Limited passive motion for 4 weeks then progressive active motion until 8 weeks followed by sport specific strengthening until at least 12 to 16 weeks postoperatively
5. Eccentric open chain biceps contraction exercises beginning at postoperative week 2 to retrain the biceps muscle and stimulate SLAP healing at the biceps anchor on the glenoid

Answer 4

What percent of shoulders have a posterior or posterior dominant attachment of the long head of the biceps onto the glenoid?

1. 0%
2. 15%
3. 30%
4. 70%
5. 100%

Answer 4

Simple bone cyst and NOF

A 14-year-old child is referred to your office for evaluation of a tibia lesion found incidentally after a minor ankle injury. A radiograph of the child's ankle is shown NOF . What treatment do you suggest?

1. Endocrine consultation secondary to associated endocrine abnormalities
2. Surgical consultation secondary to associated gastrointestional cancers
3. Short leg cast and non-weight bearing for a minimum of 6 weeks
4. Open biopsy and tumor staging
5. Routine followup of tibial lesion

Answer 5

"fallen leaf" sign is pathognomonic to

1. NOF
2. UBC
3. Fibrous dysplasia
4. Desmoplastic fibroma
5. Enchondroma

Answer 2

Osteonecrosis

In patients with sickle cell disease and asymptomatic osteonecrosis of the femoral head identified with magnetic resonance imaging, what percentage will eventually go on to femoral head collapse?

1. **< 10%**
2. **11% to 25%**
3. **26 to 50%**
4. **51 to 75%**
5. **> 75%**

Answer 5

A 40-year-old man complains of increasing groin pain. Radiographs show femoral head avascular necrosis with subchondral lucency but without femoral head collapse. Which of the following medical treatments have been shown to decrease the risk of subsequent femoral head collapse?

1. **Cyclic parathyroid hormone therapy**
2. **Bisphosphonate therapy**
3. **RANK ligand therapy**
4. **RANK therapy**
5. **Selective estrogen receptor-modulator therapy**

Answer 2

A 41-year-old male has steroid-induced avascular necrosis of the hip and decides to undergo metal on polyethylene total hip arthroplasty. His 80-year-old, sedentary father had a total hip replacement 5 years ago. With comparison to his father, the patient should be informed of the following risk?

1. **Increased risk of sciatic nerve palsy**
2. **Increased longevity of prothesis**
3. **Increased risk for polyethylene wear and osteolysis**
4. **Reduced range of motion**
5. **Lower likelihood of revision surgery**

Answer 3

Salah mcq

Angular deformity

1- A 32-month-old male with severe infantile Blounts disease has been treated with full time bracing for the past year. At most recent follow-up, the varus deformity of his bilateral legs has worsened despite compliance with bracing. What treatment is now recommended?

1. ☐ **Observation, discontinuation of bracing**
2. ☐ **Observation, continuation of full-time bracing**
3. ☑ **Bilateral proximal tibial osteotomies**

4. ☐ Bilateral distal femur osteotomies

5. ☐ Bilateral proximal tibial medial hemiepiphysiodesis

2-In the treatement of Blount's disease, how do plates or staples help correct the genu varum deformity? ⏩ Review Topic
QID: 569

1. ☑ Increasing compression forces across the physis to slow longitudinal growth

2. ☐ Decreasing compression forces across the physis to slow longitudinal growth

3. ☐ Increasing tension forces across the physis to slow longitudinal growth

4. ☐ Decreasing tension forces across the physis to slow longitudinal growth

5. ☐ Increasing shear forces across the physis to slow longitudinal growth

Periprosthetic infection

1- A 50-year-old woman underwent cemented total knee arthroplasty 3 weeks ago. She reports that she has 1 week of drainage the size of a quarter on a gauze pad that she places over the incision three times daily. Her body mass index is 53 and her medical problems include hypertension and type 2 diabetes. Blood work shows a CRP of 1.1mg/L (normal 1-3mg/L). Knee aspiration yields WBC of 673 cells/mm(3) with 30% polymorphonucleocytes, and a negative gram stain. There is no surrounding erythema but there is a 1cm area at the inferior aspect of the wound that has a large amount of serous drainage able to be expressed. She has a painless range of motion is 0° to 117°. What would be the next most appropriate step in management? ⏩ Review Topic
QID: 3618

1. ☐ Removal of all components with antibiotic spacer placement and with staged revision

2. ☐ One-stage irrigation and debridement with removal of components to a cementless prosthesis

3. ☐ Empiric oral antibiotics for 4 weeks and steri-strips over the area of drainage

4. ☑ Surgical exploration with debridement and possible polyethylene exchange

5. ☐ Bone scan and repeat aspiration with empiric intravenous antibiotics for 4 weeks

2- A 64-year-old female underwent a total knee arthroplasty 4 years ago and has increasing pain for the past 6 months. Knee aspiration reveals 4,000 leukocytes with 80% polymorphonucleocytes and a 2-stage revision arthroplasty is planned. When comparing articulating cement spacers to static spacers following resection, all of the following are potential advantages of articulating spacers EXCEPT ⏩ Review Topic
QID: 3142

1. ☐ Decreased quadriceps shortening

2. ☑ Decreased rate of infection recurrence

3. ☐ Increased knee range of motion for duration of cement spacer implantation

4. ☐ Better maintenance of joint space

5. ☐ Decreased exposure time during reimplantation

3- A 65-year-old male presents with a painful right total knee arthroplasty, which was performed ten years ago. CRP is 15 mg/L. Knee aspiration reveals 2,100 WBC's with 78% PMN's. Which of the following is the best management option? ▶▶ Review Topic
QID: 2858

1. ☐ Physical therapy, ice, and follow-up evaluation in 2 weeks

2. ☐ Repeat aspiration

3. ☐ Oral antibiotics

4. ☐ Intravenous antibiotics

5. ☑ Surgical explant of components

4- A 65-year-old male who had a total knee arthroplasty 8 years ago comes into the office with worsening knee pain. The orthopaedic surgeon is concerned about infection and aspirates the knee. Which of the following are the lowest laboratory values from a synovial aspirate suggestive of infection? ▶▶ Review Topic
QID: 550

1. ☐ WBC of 500 cells/ml and PMN 25%

2. ☐ WBC of 1,000 cells/ml and PMN 25%

3. ☑ WBC of 1,500 cells/ml and PMN 70%

4. ☐ WBC of 5,000 cells/ml and PMN 70%

5. ☐ WBC of 25,000 cells/ml and PMN 70%

5- Which of the following total hip arthroplasty patients appropriately meets the criteria for a surgical debridement with isolated femoral head and polyethylene liner exchange? ▶▶ Review Topic
QID: 370

1. ☐ Prosthesis infection of 4 months duration

2. ☐ Prosthesis infection 8 weeks following implantation

3. ☑ Prosthesis infection 5 days following a systemic infection

4. ☐ Acetabular component loosening due to osteolysis

5. ☐ Vancouver Type A periprosthetic fracture.

Compartment Syndrome

A 28-year-old male sustains a midshaft fibula fracture after being kicked during a karate tournament and develops compartment syndrome isolated to the lateral compartment of his leg. If left untreated, which of the following sensory or motor deficits would be expected?

A. Decreased sensation on the dorsum of his foot involving the hallux, 3rd, and 4th toes
B. Inability to plantar flex the ankle
C. Decreased sensation on the dorsum of his foot involving the first webspace
D. Inability to dorsiflex the ankle
E. Inability to abduct his toes

Answer : A

A 35-year-old female presents to the emergency room after a motor vehicle collision where her leg was pinned under the car for over 30 minutes. Which of the following is the most accurate way to diagnose compartment syndrome?

A. surgeon's palpation of the leg compartments
B. parathesias in her foot
C. diastolic blood pressure minus intra-compartmental pressure is less than 30 mmHg
D. diastolic blood pressure minus intra-compartmental pressure is greater than 30 mmHg
E. intra-compartmental pressure measurement of 25 mmHg

Answer : C

Which clinical sign is the most sensitive for the diagnosis of compartment syndrome in a child with a supracondylar humerus fracture?

A. pulselessness
B. palor
C. paresthesia
D. paralysis
E. increasing analgesia requirement

Answer : E

All are at increased risk for compartment except:

A. 30 year-old male with fractures of the tibial diaphysis
B. 25 year-old female patient with high-energy fracture to the distal radius
C. 27 year-old male on warfarin therapy for prosthetic heart valve who sustained leg soft tissue injury without fracture
D. 5 year-old female with supracondylar elbow nondisplaced fracture
E. 38 year-old female post IMN for tibial shaft fracture

Answer : E

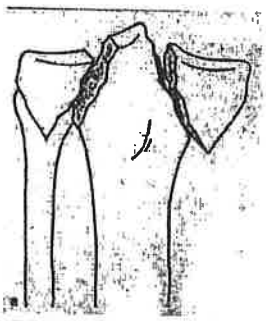
All of the following are indications for fasciotomy in compartment syndrome except:

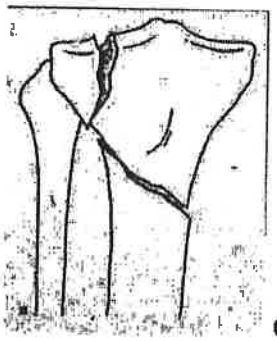
A. Unequivocal clinical findings.
B. Significant tissue injury or at risk patients.
C. More than 6 hours of total limb ischemia.
D. pressure within 20-30mm of DBP or less.
E. Missed compartment syndrome more than 24-48 hours.

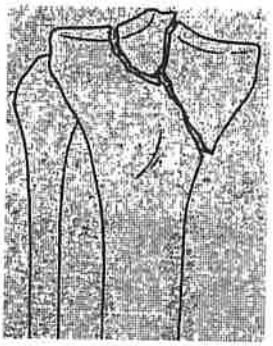
Answer : E

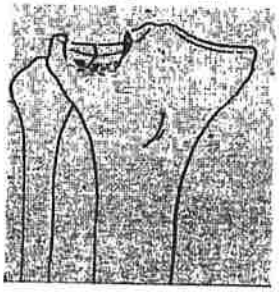
Tibial Plateau Fractures

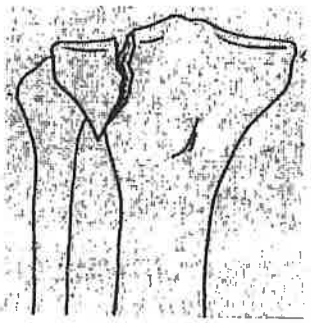
Vascular complications are most commonly seen with which of the following fractures about the knee?

A 

B 

C 

D 

E 

Answer : C

In an uninjured proximal tibia which statement best describes the shape and position of the medial tibial plateau relative to the lateral tibial plateau?

A. More concave and more proximal
B. More convex and more proximal
C. More concave and more distal
D. More convex and more distal
E. Symetric in conture and more distal

Answer : C

About tibial plateau pure depression fracture,all are true except:

A. Usually occurs in old age .
B. Usually associated with ligamentous injury.
C. Usually result in low energy trauma .
D. Management include: fragment elevation, bone graft and fixation.
E. Usually stable fractures.

Answer : B

All are indications for operative management in tibial plateau fractures,except:

A. Articular surface depression of more than 1cm.
B. More than 2 mm displacement of articular surface.
C. Varus instability (>10 °in comparison to contralateral side).
D. Associated MCL in acute setting.
E. Associated vascular injury.

Answer : D

All of the followings are considered rare complications following tibial plateau fractures, except:

A. Compartment syndrome.
B. Peroneal neuropathy.
C. Popliteal artery injury.
D. DVT.
E. Post traumatic arthritis

Answer : E

THA: Indications & Complications

A 65-year-old female with a history of developmental dysplasia of the hip (DDH) undergoes a total hip arthroplasty (THA) utlizing a posterior approach. Following THA, she notices inability to dorsiflex her operative extremity. Which of the following intra-operative techniques could have avoided this complication in this patient?

A. Utilization of an anterior approach

B. Modular components
C. Use of a larger femoral head
D. Femoral shortening osteotomy
E. Acetabular osteotomy

Answer : D

A 56-year-old male undergoes a left total hip arthroplasty and complains at the first postoperative visit that his left leg feels longer. Which of the following is the most likely factor contributing to an apparent leg length discrepancy in a patient undergoing left total hip arthroplasty?

A. Increasing femoral neck offset
B. Left-sided abductor muscle weakness
C. Right-sided abductor muscle weakness
D. Prosthesis not seated completely against the calcar
E. Increasing femoral neck lengthening

Answer : B

All of the following are independent risk factors for dislocation after total hip arthroplasty EXCEPT?

A. Female gender
B. Osteonecrosis
C. Inflammatory arthritis
D. Post traumatic osteoarthritis
E. Age >70

Answer : D

You are caring for a 18-year-old boy with severe hip arthritis and pain from a missed slipped capital femoral epiphysis. What is the best treatment option to maximize function and prevent complications?

A. THA
B. Hip arthrodesis in 5° external rotation, 0° adduction, 20° hip flexion
C. Hip arthrodesis in 5° external rotation, 15° abduction, 5° hip flexion
D. Resurfacing
E. Hip arthrodesis in 15° external rotation, 15° abduction, 5° hip flexion

Answer : B

All are true regarding THA except:

A. Age is an important factor in the decision to proceed with THA as arthroplasty is a time-limited operation.

B. A trial of nonoperative treatment should be offered even in those patients with severe disease on initial presentation.
C. Patients who delay THA until symptoms become more severe have worse clinical results than those who choose to undergo an intervention earlier in the course of disease
D. Understanding the patient's requirements for activities of daily living is essential factor in decision to THA.
E. Sever limping is an indication for THA

Answer : E

Meniscal Injuries

A "double PCL sign" seen on a sagittal MRI image of a knee is indicative of which of the following conditions?

A. Skeletal immaturity
B. ACL tear
C. PCL injury
D. Combined ACL and PCL tear
E. Bucket-handle meniscal tear

Answer : E

Tears in the peripheral one-third of the meniscus have higher healing rates following meniscal repair than those in a more central location. This clinical observation is explained by which of the following anatomic factors?

A. Increased blood supply
B. Increased elesticity
C. Increased type II collagen
D. Increased type I collagen
E. Increased glycosaminoglycan content

Answer : A

Within the menisci, most of the large collagen fiber bundles are oriented in what configuration?

A. Radially
B. Circumferentially
C. Vertically
D. Obliquely
E. Randomly

Answer : B

What neurovascular structure is most at risk when performing an inside-out repair of the posterior horn of the medial meniscus?

A. Popliteal artery
B. Peroneal nerve
C. Saphenous nerve
D. Tibial nerve
E. Sciatic nerve

Answer : C

A 16-year-old female field hockey player sustains a twisting injury to her knee. On exam, she cannot extend the knee past 30 degrees. Arthroscopy confirms a displaced bucket-handle tear of the lateral meniscus with a 3-mm peripheral rim. What is the most appropriate treatment?

A. Partial meniscectomy
B. Sub-total meniscectomy
C. Observation
D. Total mensicectomy with later meniscal transplantation
E. Meniscal repair using inside-out vertical mattress sutures

Answer : E

Introduction to Musculoskeletal Tumors

Which of the following is the most prominent feature of the presentation of children with osteosarcoma?

A. Pain with activity, relieved by rest
B. Recurrent atraumatic effusions
C. Pain that may begin as intermittent and progresses to constant
D. Pain following sports, especially running and jumping
E. Painless mass

Answer: C

Which of the following is the most important prognostic factor in a patient with a soft tissue sarcoma?

A. Presence of metastases
B. Gender
C. Size
D. Depth
E. Grade

Answer: A

Which of the following malignancies other than retinoblastoma most commonly affects patients with a mutation in the retinoblastoma (RB) gene:

A. Neurofibrosarcoma
B. Osteosarcoma
C. Malignant fibrous histiocytoma
D. Breast cancer
E. Chondrosarcoma

Answer: B

Which of the following bone lesions is typically treated by intralesional curettage:

A. Malignant fibrous histiocytoma
B. Aneurysmal bone cyst
C. Well-differentiated intramedullary osteosarcoma
D. Dedifferentiated chondrosarcoma
E. Adamantinoma

Answer: B

A 28-year-old woman has a 4-month history of increasing shoulder pain.
Her plain radiograph shows a destructive lesion. The lesion is purely lytic, expansile, and there is a pathologic fracture. The lesion has destroyed the metaphysis and extended into the epiphysis. The biopsy specimen shows a uniform distribution of multinucleated giant cells in a field of mononuclear cells. Which of the following is the correct stage according to the system of the Musculoskeletal Tumor Society:

A. Stage II
B. Stage 1
C. Stage I
D. Stage 2
E. Stage 3

Answer: E

Lumbar Disc Prolapse

A 35-year-male presents with pain radiating down the left leg, worse in the anterior leg distal to the knee. On physical exam, he is unable to go from a sitting position to a standing position with a single leg on the left, whereas he has no difficulty on the right. His patellar reflex is absent on the left, and 2+ on the right. Which of the following clinical senarios would best produce this pattern of symptoms.

A. Left L2-3 foraminal herniated nucleus pulposis

B. Left L4-5 central herniated nucleus pulposis
C. Left L4-5 paracentral herniated nucleus pulposis
D. Left L4-5 foraminal herniated nucleus pulposis
E. Left L5-S1 paracentral herniated nucleus pulposis

Answer: D

In patients with lumbar disc herniations resulting in significant unilateral leg pain but no functionally limiting weakness, surgical decompression has what long term effects when compared to nonoperative management.

A. Surgery leads to improved outcomes at 4 years
B. Surgery leads to poorer outcomes at 4 years
C. Surgical and nonsurgical treatment is comparable at 4 years
D. Surgery leads to a decreased rate of functionally limiting weakness
E. Surgery leads to an increased rate of functionally limiting weakness

Answer: C

45-year-old manual laborer presents to the office with acute onset back pain that radiates to his right leg after carrying a heavy object. He also has mild weakness with ankle dorsiflexion on that side. What should be his initial treatment? His MRI is shown in Figure

A. Microdiskectomy
B. Posterior spinal fusion with instrumentation
C. Decompression only
D. Strict bedrest
E. Anti-inflammatory medication and physical therapy

Answer: E

All are true regarding lumbar disc herniation except:

A. The straight leg raise test has high sensitivity but low specificity
B. The straight leg raise test on the contralateral side has a lower sensitivity but higher specificity for L4-L5 and L5-S1 disk herniations.
C. The femoral stretch test is confirmatory when it reproduces posterior thigh pain
D. Epidural steroid injections do not appear to change the rate at which lumbar disc herniations regress
E. Lumbar disc herniations recur at about equal rates (approximately 5%) regardless of surgical type of treatment

Answer: C

Regarding the composition of the intervertebral disc, all is true , except

A. The annulus fibrosis collagen is mainly Type 1.
B. the nucleus fibrosis consists 70% water of its material
C. The anulus has a single layer lamellar architecture made of collagen fibers
D. The nucleus pulposus provides resistance to axial compression
E. The nucleus pulposus contains a cellular component of both fibroblast-like and chondrocyte-like cells

Answer: C

Chronic osteomeyllitis

Q1 Most common Route of Infection of chronic osteomyelitis?

(1) Hematogenous seeding.
(2) Inadequate treatment of acute osteomyelitis .

(3) Open trauma.

Contiguous spread. from soft tissues, as in diabetic ulcers or ulcers in peripheral vascular disease.

(4) Infection with organisms, such as Mycobacterium tuberculosis and Treponema species (syphilis)

Q2- Regarding the pathogens causing chronic osteomyelitis, all are true

except

(1) Staphylococcus aureus – the most common.
(2) Coagulase –ve Staph – associated with foreign bodies.
(3) Enterobacteriaceae spp – immunocompromised patients.
(4) Bartonella henselae – HIV infection.
(5) Pasteurella multocida – animal bites.

Q3 Regarding the diagnosis of Chronic osteomyelitis?

(1) Elevated ESR and CRP is often accompanied with chronic osteomyelitis.
(2) Leukocyte count always exceeds 15000/mm3
(3) The diagnosis of long-bone osteomyelitis rests on the obligatory isolation of the pathogen from the bone lesion or blood culture (+ve in up to 50% of children).
(4) Radiographic findings on plain X-rays lag two weeks behind the clinical progress of infection.
(5) Plain film radiography is the primary investigative tool.

Q4 Regarding Brodies Abscess?

(1) It is a chronic localized bone abscess.
(2) most commonly involving the distal part of the tibia.
(3) It is most commonly occurs in elderly.
(4) Subacute: may present with fever, pain, and periosteal elevation.
(5) Surgical debridement and culture-directed antibiotics are often curative

Q5 Regarding treatment of Chronic osteomyelitis according to stage which is false?

(1) In stage one (medullary), in children 1–2 weeks of IV antibiotics followed by 4 weeks of oral antibiotics.
(2) In stage one (medullary), in adults surgical treatment and a 4-week course of IV antibiotics, repeated if necessary
(3) Surgical treatment then IV antibiotics only for 2 weeks is the treatment in stage 2 (superficial)
(4) Stages 3+4 (Localized and Diffuse). 6 weeks IV antibiotics changed according to culture results.
(5) No need for debridement and hardware removal in stage 3+4.

Subtrochanteric fractures

(1) the gold standard implant for fixation in subtrochantric #s is –

a. I M N.
b. D H S.
c. Skin traction.
d. Plate & screws.
e. External fixation.

(2) Regarding Subtrochanteric # which is incorrect

a. The Russell-Taylor classification. Is based on the integrity of the piriformis fossa,
b. This classification doesn't take into consideration the involvement of the greater and lesser trochanters in the fractures.
c. Group I fractures do not involve the piriformis fossa.
d. Group II fractures extend proximally into the greater trochanter and involve the piriformis fossa entry site.
e. In both types IA and IB, however, closed IM nailing techniques have the biologic advantage of minimizing vascular compromise of the fracture fragments.

(3)Regarding the treatment of subtrochanteric #

a. The principle of treatment is internal fixation to achieve early stability for mobilization and maximal functional restoration.
b. The restoration of the length and the correction of angular deformities are the primary goals of reduction
c. Biomechanically, it must be strong enough to counteract the stress across the subtrochanteric region, which can best be achieved by restoring the lateral cortical continuity.
d. Nonoperative treatment is only indicated in the pediatric age group or in patients whose general condition do not allow surgery under anesthesia.
e. The reduced fracture should be repaired with stable internal fixation to allow early mobilization.
f.

1. **A 66-year-old male with a remote history of prostate cancer sustains a fall down a hill while gardening. During intramedullary nailing of his fracture, which intraoperative reduction maneuvers should take place to the proximal fragment to properly align the fracture?**

g. ☐ **Flexion and internal rotation**
h. ☐ **Extension and internal rotation**
i. ☐ **Flexion and external rotation**
j. ☐ **Extension and external rotation**
k. ☐ **Abduction and internal rotation**

All of the following are advantages of supine over lateral positioning during intramedullary nailing of subtrochanteric femur fractures EXCEPT

1. ☐ **Can be protective to an injured spine**
2. ☐ **Facilitates access to other injured sites in the polytrauma patient**
3. ☐ **Provides easier fluoroscopic imaging**
4. ☐ **Allows for easy reduction of the distal fragment to the flexed proximal fragment**
5. ☐ **Easier to assess rotation**

Perthes disease

Q1 : All of the following is correct except:

- A) Perthes' disease is idiopathic avascular necrosis of the femoral head in childhood.

- B) There is more that is not known about Perthes' than is known, and many controversies remain in Perthes'.
- C) M/F=6:1
- D) Bilaterality: up to 25% usually is not synchronous.
- E) Common disease in black African.

Q2: About the pathology of perthe's disease , one is incorrect :

- A) Thickening of articular epiph. Cartilage.
- B) In severe cases, physeal disruption and distortion of its column.
- C) Fragmentation seen and represents cessation of repair process.
- D) Distortion and remodeling of the femoral head with asclerotic line curving across F.N

Q3:One of the following about Perthe's disease is false :

- A) M/F= 6:1
- B) Age: 10-14 years old.
- C) Limping: most common presentation
- D) the parents may describe the child as being:Extremely hyperactive,Exhibit attention deficit &Smaller in stature.
- E) The most prominent findings is stiffness:

Q4: About the classifications of perthe's disease ,one is false :

- A) Salter and Thompson:Useful early in the disease.
- B) Salter and Thompson Based on extension of the subchondral fracture. Occurs in the sclerotic phase.
- C) Salter and Thompson Disadvantage.: only seen in 80 % of cases
- D) The Lateral Pillar Classification of Herring: Based on: maintenance of height of the lateral pillar of the femoral head, compared to the opposite side.
- E) The Lateral Pillar Classification of Herring: Definitive measurement must be made on fullest extent of fragmentation.

Q5 : Of the clinical & radiological signs of risk for Perthe's disease ; one is false:

- A)Older child.
- B)Heavy child.
- C)Abduction contracture.
- D)Diffuse metaphyseal involvement.
- E) Gage sign.

Knee o.a recommendation

hich of the following treatment options does not have Grade A recommendations supporting its utilization by the American Academy of Orthopaedic Surgeons (AAOS) Guidelines for Treatment of Knee Arthritis (OA)?

1. **Recommend patients be encouraged to participate in low-impact aerobic fitness exercises**
2. **Recommend glucosamine and/or chondroitin sulfate or hydrochloride not be prescribed for patients with symptomatic OA of the knee**
3. **Recommend arthroscopic partial meniscectomy as an option in patients with symptomatic OA of the knee who also have primary signs and symptoms of a torn meniscus**
4. **Recommend patients who are overweight (as defined by a BMI>25), should be encouraged to lose weight**
6. **Recommend against performing arthroscopy with debridement or lavage in patients with a primary diagnosis of symptomatic OA of the knee**

According to the recommendations made by the AAOS in their clinical guidelines for the treatment of osteoarthritis (OA) of the knee, all of the following nonoperative modalities are supported by the literature EXCEPT:

1. **Weight loss**
2. **Activity modifications**
3. **Quadriceps strengthening**
4. **Intra-articular hyaluronic acid injections**
6. **Intra-articular corticosteroid injections**

Forearm

1. **Malunion resulting in loss of radial bow after open reduction and internal fixation of a diaphyseal radius and ulna fracture will most often result in:**

(A) Loss of elbow motion
✓ (B) Loss of grip strength
(C) Early wrist arthritis
(D) Early elbow arthritis
(E) No significant loss of function

2.A 34-year-old man involved in a motor vehicle accident sustains a pneumothorax, a closed femur fracture, and closed, displaced fractures of the ipsilateral humerus, radius, and ulna. Management of his femur fracture is open reduction internal fixation. Management of his humerus fracture should consist of:

(A) Skeletal traction
(B) Closed reduction and plaster immobilization
✓ © Open reduction and internal fixation of all fractures
(D) External fixation of all fractures
(E) Internal fixation of the humeral fracture and immobilization of the forearm fracture

3.A 12-year-old male sustains a ulnar fracture with an associated posterior-lateral radial head dislocation. After undergoing closed reduction, the radiocapitellar joint is noted to remain non-concentric. What is the most likely finding?

1.Lateral ulnar collateral ligament disruption

2.Anterior band of the medial collateral disruption

3.Posterior band of the medial collateral ligament disruption

4.Annular ligament interposition ✓

5.Anconeus muscle interposition

4.A 25-year-old female sustains the isolated fracture seen in Figure A. The patient elects to have nonoperative management. When compared to operative treatment, which of the following is true of the clinical outcome following nonoperative management?

1Long arm cast immobilization is necessary

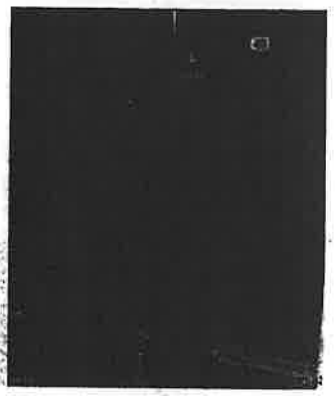
2Twenty degree loss of forearm rotation

3.Loss of wrist motion

4.Loss of elbow motion

5.Equivalent clinical outcomes ✓

5. A 30-year-old female presents with the injury shown in Figure A after falling on her outstretched arm. During operative treatment of the fracture, anatomic reduction of the radius is achieved. However, the surgeon is unable to reduce the distal radioulnar joint. What structure is most likely impeding the reduction?



1.Median nerve

2.Flexor carpi radialis

3Pronator quadratus

4.Extensor carpi ulnaris ✓

5Flexor carpi ulnaris

A 9-year-old boy is examined due to a closed distal forearm fracture. The radius and ulna are both fractured and translated 100%. After manipulation twice with sedation, the translation cannot be reduced. There is 10-mm shortening of the radius and 5-mm shortening of the ulna. The distal radial angulation on the anteroposterior view is 5° less than normal. The least invasive treatment which would produce acceptable results is:

(A) Closed reduction in the operating room under general anesthesia

(B) Open reduction and cast application

(C) Open reduction and percutaneous pin fixation

(D) Open reduction and plate fixation

✓ (E) Acceptance of the reduction and maintenance with a cast

Tibia plafond #

1.Reudi & Allgrower have shown that plate and screw ORIF for pilon gives excellent results if all of the follwing are followed except:

(A) Anatomic reconsturction of the joint obtained
(B) Good rigid internal fixation
(C) Bond graft
✓ (D) External fixation
(E) Non weight bearing for 3 months

2.A 35-year-old man sustains a closed tibial pilon fracture. The patient undergoes open reduction internal fixation of the fracture with supplemental external fixation. Which of the following is the most common complication after open fixation:

(A) Loss of fixation
(B) Prominent hardware
(C) Osteomyelitis
✓ (D) Soft tissue complications
(E) Nonunion

3 .Which of the following statements is true regarding brake travel time after surgical treatment of complex lower extremity trauma?

1.Brake travel time is significantly reduced until 6 weeks after patient begins weight bearing ✓

3.Return of normal brake travel time takes longer after long bone fracture compared to articular fractures

3.Normal brake travel time correlates with improved short musculoskeletal functional assessment scores

4Brake travel time is significantly reduced until 8 weeks after patient begins weight bearing
5Brake travel time returns to normal when weight bearing begins

4. In a pilon fracture, the Chaput fragment typically maintains soft tissue attachment via which of the following structures?

1.Interosseous ligament

3.Posterior inferior tibiofibular ligament

4.Deltoid ligament

5.Tibiotalar ligament

5. A 34-year-old male sustains the closed injury seen in figure A as a result of a high-speed motor vehicle collision. What is the most appropriate next step in treatment? ⏩Review Topic

1.Open reduction and internal fixation

2.Spanning external fixation ✓

3.Percutaneous internal fixation

4.Closed reduction and cast placement

5.Ankle arthrodesis

Periprosthetic Fracture

1. **A periprosthetic acetabular fractures is noted intra-operatively during total hip arthroplasty. The acetabular component is stable and well-fixed after implantation of an ingrowth acetabular shell. Which of the following treatment options will best maintain motion and clinical function?**

1.ORIF of the posterior column and THA revision

2.Cage reconstruction of acetabular component

3THA revision using a cemented acetabular component

4.Placement of a hip abductor brace and non-weight bearing in the affected limb

5.No change in treatment ✓

2) During insertion of a cementless femoral stem, a nondisplaced fracture is noticed along the femoral calcar. Which of the following is the most appropriate next step in surgical management?

1.Trial reduction of the stem in place without further insertion of the stem

2.Continued insertion of the stem, reduction of the hip, and non-weight bearing activity restrictions following surgery

3.Removal of the stem, cerclage wiring around the fracture site, and insertion of a stem that bypasses the distal extent of the fracture by 2 cortical diameters of the femur ✓

4.Removal of the stem and conversion to a cemented femoral stem

5.Removal of the stem, open reduction internal fixation of the stem with planned delayed femoral stem insertion following fracture healing

3) A 67-year-old man 6 years status post right total hip arthroplasty falls while walking his dog. He complains of pain and is unable to bear weight through the right leg. He denies any hip or thigh pain prior to this fall. A radiograph is provided in figure A. Which of the following is the most appropriate management

1.Traction for 3 weeks followed by 2 months of non-weight bearing mobilization

2.Open reduction and plate fixation with cable augmentation proximally ✓

3.Revision arthroplasty with a cementless long stem bypassing the fracture site by two cortical diameters

4.Revision arthroplasty with cemented femoral stem bypassing the fracture site by two cortical diameters

5.Revision arthroplasty with cementless long stem bypassing the fracture site by two cortical diameters and allograft strut augmentation

4) A 73 year-old female underwent total knee arthroplasty 10 years ago. She sustained a proximal tibial shaft periprosthetic fracture after a ground level fall. Radiographs show that the fracture involves the tibial component's stem with loosening of the tibial component. Which of the following is the most appropriate treatment?

1.Open reduction and internal fixation of the tibia

2.External fixation

3.Intramedullary rod fixation

4.Revision with a long stem tibial component that bypasses the fracture ✓

5.Fracture bracing

5) A 88-year-old female fell onto her right hip sustaining the fracture shown in Figure A. Past medical history is significant for mild dementia and moderate coronary artery disease. At baseline, she ambulates with a walker. There are concerns about her ability to maintain weight-bearing precautions following surgery. Which of the following is most appropriate for management of the femoral side?

1.Non-operative management

2.Open reduction, internal fixation with plate and cerclage wires

3.Proximal femoral replacement with megaprosthesis ✓

4.Impaction bone grafting

5.Cortical strut allograft with cerclage wiring

Slipped Capital Femoral Epiphysis

1) Southwick angle (epiphyseal-shaft angle) serves what purpose in the evaluation of a slipped capital femoral epiphysis (SCFE)?

1.Determine prognosis for AVN

2.Determine the severity of the slip ✓

3.Determine the presence or absence of a slip

4.Determine the etiology of a slip

5.Determine the chronicity of the slip

2) Which of the following treatment techniques decreases the risk of osteonecrosis in patients with unstable slipped femoral capital epiphysis (SCFE)?

1.open reduction and pinning with multiple pins

2.closed reduction and pinning with multiple pins

3closed reduction and pinning with a single cannulated screw

4.in situ percutaneous pinning with multiple pins

5.in situ percutaneous pinning with a single cannulated screw ✓

3) A 14-year-old overweight boy complains of vague left knee pain which worsens with activity. He has an antalgic gait and increased external rotation of his foot progression angle compared to the contralateral side. Knee radiographs, including stress views, are negative. What is the next step in management?

1.Knee MRI

2.Knee CT

3.AP pelvis and frog-lateral views ✓

4.Diagnostic knee arthroscopy

5.Hip MRI

4) Hypothyroidism is most commonly associated with which of the following pediatric conditions?

1.Legg Calve Perthes

2.Slipped capital femoral epiphysis ✓

3.Toxic synovitis

4.Achondroplasia

5.Rickets

5) An 11-year-old boy with hypothyroidism presents with groin pain and the inability to ambulate. His radiograph is shown in Figure A. What is the most appropriate treatment?

1.Toe-touch weightbearing for 3 weeks

2.Hip spica cast and non-weight bearing for 4 weeks

3.In situ pinning of the right hip

4.Open reduction and pinning of the right hip

5.In situ pinning of both hips ✓

Metastatic Cancer of Bone

1) All of the following are known steps in the development of a malignant tumor with the ability to metastasize EXCEPT?

1.Increased apoptosis ✓

2.Sustained angiogenesis

3.Tumor cell intravasation

4.Avoidance of immune surveillance

5.Genomic instability

2) A 59-year-old female with a history of biopsy proven metastatic renal cell carcinoma presents with a thoracic spine lesion consistent with renal cell carcinoma. She has lower extremity weakness and sustained clonus bilaterally. What is the most appropriate management prior to surgery?

1.Blood cultures

2.High dose IV methylprednisone

3.Arterial embolization ✓

4.CT guided cryotherapy

5.Radiation therapy

3) Metastatic bony lesions that occur distal to the elbows or knees are most likely to originate from which one of the following primary organs?

1.Breast

2.Lung ✓

3.Thyroid

4.Gastrointestinal

5.Prostate

4) You are caring for a 63-year-old female with metastatic breast cancer to the lumbar spine. Her neurological examination shows significant weakness in leg function and she is having difficulty ambulating. Imaging shows significant neural element compression by the tumor and complete erosion of the L1 vertebrae. She has no other sites of metastatic disease and is otherwise healthy. What treatment option do you recommend to best maintain her function?

1.Palliative therapy

2.Complete neural element decompression

3.Complete neural element decompression with instrumentation to stabilize the spine

4.Complete neural element decompression, instrumentation, and postoperative chemotherapy

5.Complete neural element decompression, instrumentation, and postoperative radiotherapy ✓

5) Which of the following correctly lists the life expectancy from least life expectancy to greatest life expectancy when a patient presents with metastatic carcinoma to bone?

1.Prostate < breast < thyroid < renal < lung

2.Renal < prostate < breast < thyroid < lung

3.Lung < renal < thyroid < breast < prostate

4.Thyroid < renal < lung < breast < prostate

5.Lung < renal < breast < prostate < thyroid ✓

Which of the following is the best approximation of survival after bone metastases in lung cancer:

✓ (A) 6 months

(B) 24 months

(C) 36 months

(D) 48 months

(E) 60 months

أسئلة المسابقة

سنوات سابقة

عظام

بورداكي

2016

1) Homeostasis in the first 24 hours after acute hemorrhage takes place-by all of the following EXCEPT:
   a. Albumin derived from the liver.
   b. Mobilization of fluid and electrolytes from the interstitial spaces to the intravascular spaces.
   c. Vasoconstriction.
   d. Decrease renal loss of water by effect of arginine – vasopressine.
   e. Decrease renal losses of electrolyte by effect of steroids.
2) In patient with thrombocytopenia, the minimum blood platelet count necessary for safe elective surgery is :
   a. Twenty thousand/ mm^3.
   b. Fifty thousand / mm^3.
   c. One hundred thousand / mm^3.
   d. One hundred and twenty thousand/mm^3.
   e. One hundred and fifty thousand / mm^3.
3) Concerning massive blood transfusion, all are true EXCEPT:
   a. The term implies a single transfusion more than 2500 ml transfusion over 24 hours.
   b. Warning of the blood decrease the incidence of cardiac arrest.
   c. If diffuse bleeding occurs platelet and coagulation screening should be done and deficits corrected by fresh frozen plasma.
   d. The physiologic sequences of cirtrate toxicity are very significant.
   e. The increased potassium content of the stored blood does not provide clinical effect unless the patient has severe oligurea.
4) The most common cause of gram negative infection in hospitalized adults is :
   a. Bladder catheterization.
   b. Tracheotomy.
   c. Exogenous theatre acquired wound infection.
   d. Post partum genital infection.
   e. Surgery on gastrointestinal.
5) Which of the following retroperitoneal hematomas should not be explored:
   a. A late expanding peritoneal hematoma.
   b. A large non expanding pelvic hematoma.
   c. A small centrally located non expanding hematoma superior to the pelvis.
   d. A large non expanding hematoma over the head and body of the pancreas.
   e. A small non expanding hematoma over the body of the pancreas with intact pancreatic capsule.
6) All are true concerning deltoid muscle EXCEPT:
   a. Principal abductor of humerus.
   b. Arises in part from the lateral third of the clavicle.
   c. Innervated by the axillary nerve.
   d. Works synergistically with biceps brachia.
   e. Inserts into the lateral surface of the humerus.
7) All the following muscles are involved in abduction of the arm to 180^0 EXCEPT:
   a. Supraspinatus.
   b. Deltoid.
   c. Subscapularis.
   d. Tarpizius.
   e. Latissimus dorsi.
8) Concerning the acetabulum, all of the following is correct EXCEPT:
   a. The anterior 2/5 formed by the pubis.
   b. The acetabular notch bridge by the transverse ligament.
   c. Its directed laterally, downwards and forward.

d. The fossa is filled with fat.
e. The articular surface called the lunate surface.

9) Ilio tibial tract is a thickened band of fascia lying on the lat. Aspect of the thigh, the following are its attachments EXCEPT:
   a. Lat. Border of patella.
   b. Lat. Condyle of femur.
   c. Lat. Condyle of tibia.
   d. Head of fibula.
   e. Tendon of vastus lateralis.

10) The following statements are correct EXCEPT:
   a. Total paralysis of the adductor magnus with injury of the obturator nerve.
   b. The 4th layer of the foot contains the plantar and the dorsal interossei.
   c. The action of articularis genu muscle is to prevent the synovium from being insinuated between the patellar and femur.
   d. The five genicular arteries are branches of the popliteal artery.
   e. The peroneus tertius is contained in the anterior compartment of the leg.

11) Warfarin is currently the most commonly used prophylaxis against venous thromboembolic disease in hip and knee replacement patients. Regarding the low dose warfarin protocol, the following are true EXCEPT:
   a. Warfarin regiment is safe, cost effective.
   b. Warfarin blocks transformation of vitamin K in the liver.
   c. Clotting factors II, VII, IX and X synthesis is vitamin K dependant.
   d. The target PT is maintained between 1.3 and 1.5 times the control value.
   e. The INR should be maintained between 2.5 and 3.5 for DVT prophylaxis.

12) Regarding blood management in orthopaedic patients scheduled for THA and TKA, the following are true EXCEPT:
   a. Infection developed more frequently after operations involving allogenic blood transfusion than after no transfusion opeation.
   b. Among alternatives to allogenic blood transfusion, autologous blood tansfusion is the most widely used method of blood replacement (preoperative donation).
   c. There is no association between allogenic blood transfusion and the duration of hospitalization.
   d. Haemodiluation and Peri operative blood salvage are other alternatives to allogenic blood transfusion.
   e. The baseline haemoglobin level is the consistent predictor of allogenic blood transfusion (Hg 130 gms per litre or less).

13) Regarding theatre prevention of post operative wound infections in adult hip and knee reconstruction, the following is true EXCEPT:
   a. Horizontal laminar airflow reduces the number of bacteria at the wound site.
   b. Cloth scrub clothes (suit) offers no barrier to bacteria as its porosity measures between 100-150 um.
   c. Surgical gloves become contaminated during a 1.5 hours total hip replacement, the hands within the gloves are the sources of bacterial contamination.
   d. The sucker tip is a recognized source of surgical contamination. It should be changed frequently every 30 minutes.
   e. The presence of hair follicles prevent complete sterilization of the skin, recolonization of the skin happens within 30 minutes and bacteria counts achieve normal bacterial levels by three hours.

14) Regarding amputation the following are true EXCEPT:
   a. The metabolic energy cast of walking is inversely proportional to the length of the residual limb.
   b. There is increased oxygen consumption with more proximal amputation.

c. Functional independence measure (FIM) score correspond inversely with the length of the residual limb.
d. To achieve dynamic control within prosthetic socket muscles should be secured at dynamic length to bone (myodesis).
e. In vascular transfermorl amputees the metabolic cost of walking produced walking outside of the home.

15) Regarding the elbow joint, the following are true EXCEPT:
a. It serves as fulecrum for the forearm lever.
b. It is a weight bearing joint in patients using crutches.
c. Axis fo rotationfor a flexion / extension is the center of the trochlea.
d. Axis of pronation / supination is a line from trochlea throu upper ulna to distal radius.
e. Dynamic loads around the elbow exceed body weight.

16) Regarding biomechanics of the knee joint, the following are true EXCEPT:

a. At 90^0 degrees of flexion, 45^0 degrees of external rotation and 30^0 degrees of internal rotation are possible.
b. Tibiofemoral joint surfaces are subjected to a loading force equal three times body weight in level walking.
c. Patellofemoral joint load rages from ½ body weight to seven times body weight with squatting and jogging.
d. Arthrodesis position is $0\text{-}7^0$ degrees valgus, $10\text{-}15^0$ degrees flexion.
e. Mechanical axis along shafts of femur and tibia.

17) The greatest percentage of deaths in trauma centers associated with injury to what site?
a. Head.
b. Chest.
c. Abdomen.
d. Navicular.
e. Pelvis.

18) Which of the following plate implants is associated with the greatest risk of the re-fracture after removal from a healed radial shaft fracture?
a. 4.5 mm semi-tubular.
b. 3.5 mm dynamic compression.
c. 4.5 mm dynamic compression.
d. 3.5 mm one third tubular.
e. 4.5 mm one third tubular.

19) The most useful diagnostic examination to detect significant intra abdominal injury is
a. Ct scan.
b. MRI scan.
c. Ulrasound.
d. Intravenous myelogram and cystogram.
e. Peritoneal lavage.

20) The therapeutic rationale for early (within 24 hours) stabilization of femoral shaft fractures for multiple trauma patients is to decrease:
a. Rate of non union.
b. Pulmonary complications.
c. Incidence of infection.
d. Required anal gesics.
e. Rate of transfusion.

21) A puncture wound of the foot was treated for 5 days with cloxacillin, but after one week the wound become edematosis, red and draining . the most likely infecting organism is :
a. Group A streptococcus.
b. Group B streptococcus.

c. Staphylococcus aureus.
d. Haemophilus influenzae.
e. Pseudomonas aeruginosa.

22) The most common consequence of an untreated compartment syndrome of the foot is :
a. Clawing of the toes.
b. Sensory loss on the plantar aspect of the foot.
c. Sensory loss on the dorsum of the foot.
d. Equinus deformity.
e. Varus deformity.

23) The most important nutritional supplement required in a critically ill patient is :
a. Fat.
b. Carbohydrate.
c. Protein.
d. Iron.
e. Calcium.

24) Fasciotomy of the lateral compartment of the leg will decompress:
a. Anterior tibial artery and deep peroneal nerve.
b. Deep peroneal nerve.
c. Superficial peroneal nerve.
d. Peroneal artery.
e. Perforating peroneal artery.

25) What radiographic finding is the best indication of long bone healing ?
a. Diffuse osteopenia near the fracture site.
b. Loss of distinct fracture line.
c. Dense trabeculae near the fracture line.
d. Restoration of cortical continuity.
e. Abundant callus with calcification.

26) The mechanism of facilitating bone healing with hydroxyapatite biomatrix is an example of:
a. osteoconduction.
b. Osteogenesis.
c. Osteoinduction.
d. Osteoresorption.
e. Osteoclasis.

27) Which of the following is the most common mode of failure of fixation in intertrochnatric hip fractures using compression hip screw?
a. Fracture of the sich plate.
b. Fracture of the femur below the plate.
c. Superior cut out of the screw from the femoral head.
d. Disengagement of the lag screws and sich plate.
e. Pulling out of the cortical screws from the femoral shaft.

28) Acute hemarthrosis in the knee alters quadriceps strength by :
a. Extra vasation of blood into muscle.
b. Altering knee range of motion.
c. Decreaseing knee of motion.
d. Inhibiting muscle firing.
e. Damaging the quadriceps tendon.

29) A Bennett's fracture is difficult to maintain in a reduced position mainly because of the pull of the :
a. Flexor pollicies longus.
b. Flexor pollicis brevis
c. Extensor pollicis brevis.
d. Abductor pollicis longus.
e. Opponeus pollicis.

30) The most common site of epiphyses plate injuries is:

a. Distal tibia and fibula.
b. Proximal tibia.
c. Distal femur.
d. Wrist.
e. Elbow.

31) A fracture in children that often requires open reduction is:

a. Femoral condyle.
b. Humeral lateral epicondyle.
c. Distal tibial epiphyses separation.
d. Both bones of forearm.
e. Subtrochantric fracture of femur.

32) Following an epileptiform seizure, a patient complains of shoulder pain, the most likely diagnosis is:

a. Acromioclavicular separation.
b. Fracture of the distal clavicle.
c. Rotator cuff tear.
d. Anterior glenohumeral dislocation.
e. Posterior glenohumeal dislocation.

33) Complications of distal radial fractures with dorsal displacement and angulation are all of the following EXCEPT:

a. Median nerve compression.
b. Stiffness of the shoulder.
c. Sensory branch of the radial nerve stretching.
d. Flexor pollicies longus tendon rupture.
e. Volkann's ischemic contracture.

34) All are true about fractures of the proximal humerus EXCEPT:

a. Eighty percent of proximal humeral fractures are impacted and relatively non-displaced.
b. Two parts lesser tuberosity fractures are usually associated with posterior dislocations.
c. Displaced or unstable two and three part fractures are those with greater than 45^0 of angulation or a displacement of the humeral head.
d. Open reduction and internal fixation is the procedure of choice for two and three a part fractures.
e. Four parts fracture is best managed using tension band & with minimal surgical disruption of soft tissue to the humeral head to minimize A.V.N of the head.

35) All are true about scapular fracture EXCEPT :

a. The most common fracture type is the body of the scapula.
b. Rib fractures being the most common associated injuries.
c. Fractures of the spine of the scapula can cause rotator cuff dysfunction.
d. There is no rule for surgical management of fractures of the scapular.
e. Scapular fractures are often diagnosed incidentally.

36) All of the following statements regarding the spread of bacterial tenosynovitis in the hand are true EXCEPT:

a. Infection in the tendon of the little finger tends to extend to the wrist and the adjacent ring finger.
b. Infection in the tendon of the thumb tends to extend to the wrist and little finger.
c. Infection in the tendon of the wrist tends to extend to the little finger and the thumb.

d. Infection in the tendon of the middle finger doesn't tend to extend to the ring and index finger.
e. Infection in the tendon of the index finger generally does not extend to the wrist.

37) Dupuytren's contracture of the hand is due to shortening or contracture with one of the following:
a. The long flexor tendons.
b. The palmar lumbrical muscles.
c. The palmar interossci.
d. The palmar aponeurosus.
e. The skin of the palmar of the hand.

38) In complete chronic rupture of the rotator cuff, one of the following is TRUE:
a. Pain is usually maximal in the arc of 60-120 ^{0} of shoulder elevation.
b. CT scan is the best model to confirm diagnosis.
c. There is significant history of injury.
d. Pain rather than loss of function is the main indication for operative repair.
e. Routine radiographs of the shoulder are invariable normal.

39) All are true concerning Ollier's disease. (Multiple enchondromatosis) EXCEPT:
a. Is a dyschondroplasia.
b. Usually unilaterally, and is associated with retarded bone growth.
c. Genetically inherited by one autosomal dominant gene.
d. Occasionally associated with the development of a chondrosarcoma.
e. Maffuci's syndrome is the association with soft tissue haemagiomata.

40) All are true concerning a swan neck deformity of the finger EXCEPT:
a. Hyperextension of the metacarpophalangeal joint, flexion of the proximal interphalangeal joint and extension of the distal interphalangeal joint.
b. Flexion of the metacarpophalangeal joint, hyperextension of the proximal interphalangeal joint and flexion of the distal interphalangeal joint.
c. Frequently associated with rheumatoid arthritis.
d. Treatable in-patients with rheumatoid arthritis.
e. May be seen in normal individuals.

41) Regarding the radiological criteria for surgical treatment of the tibial plateau fractures, all are true EXCEPT:
a. Condylar widening of more than 5 mm.
b. Lateral condylar fracture with step of more then 3mm.
c. Laterally tilted of bicondylar fracture more than five degrees..
d. Is not indicated if medial plateau tilting is less than five degrees.
e. Is not indicated in non-displaced axial bicondylar fracture.

42) Concerning tibial plateau fractures with associated meniscus and ligamentus injuries, all of the following are true EXCEPT:
a. maximal preservation of the meniscuses crucial for lasting satisfactory results.
b. Approximately 50% of plateau fractures has associated meniscus injury.
c. The medial collateral ligament is the ligament most commonly injured.
d. MRI has no significant advantage over C.T Scan in evaluating the knee.
e. A poor late out come was strongly associated with greater than 10 degrees of instability in full extension.

43) Concerning fractures of the tibial plafond, all are true EXCEPT:
a. The best timing for open reduction and internal fixation is with in the first 8-12 hours.
b. In severely comminuted fracture, it recommended to delay arthrodesis for a minimum of 6-12 weeks.
c. Osteo-arthritis and limitation of range of motion is fate of the conservative treatment.

d. Wound devence and deep wound infection is the major threat after reduction and plating.
e. Despite its high rate of complications the trend for open reduction and plating did not change.

44) Concerning the acute injury to the syndesmotic ligament of the ankle without fracture, all are true EXCEPT:
a. Must differentiated from the ankle sprain.
b. Pain is usually in the anterior ankle.
c. Squeeze test is usually positive.
d. The scintigraphy has a sensitivity of 100% and specificity of 70% .
e. Fixation by using syndesmotic screw for 6-8 weeks is the treatment of choice.

45) Concerning compartment syndrome of the foot, all are true EXCEPT:
a. It associates crush injuries of the foot.
b. Nine compartments are recognized in the foot.
c. Release of the compartments is recommended when the intra compartmental pressure exceeds 30 mm Hg.
d. Delay in releasing the compartments result in slouphing of the skin dorsally.
e. Two dorsal and one medial incisions, is the most predictable way to decompress the foot.

46) Complications of non surgical treatment of calcaneal fractures include all the followings EXCEPT:
a. Subtalar arthrosis.
b. Peroneal tendon em-pingment.
c. Hind foot varus.
d. Widening of hind foot.
e. Compartment syndrome of the foot.

47) For a young adult patient with intra articular fracture of neck of femur, all are true EXCEPT:
a. Early surgical precise reduction and internal fixation is indicated.
b. The incidence of vascular necrosis ranges from 10% to 45%.
c. Non union is present of the fracture has not healed with in the first year after injury.
d. Using dynamic compression hip screw and plate with large hip pin can compromise the blood supply to the head.
e. Fixation of the head in 20 degrees valgus is optimal to decrease rate of non union and a vascular necrosis.

48) Concerning fractures of the femoral diaphysis, one is true :
a. External fixators results in lower incidence of the knee stiffness than intramedullary nailing.
b. Plating has lower incidence of deep infection than I.M.nailing.
c. Treatment by traction has the least complications.
d. Heterotropic calcifications of the hip occurs in 20% of cases after intramedullary nailing of the femur.
e. Fat embolism is reported after intramedullary remaining.

49) Concerning fractures of the head of femur, all are true EXCEPT:
a. Closed treatment is accepted in Pepkins I fracture if anatomic reduction lachieved.
b. Traction or non weight bearing for 4-6 weeks is mandatory after open fixation.
c. A higher incidence of association is noticed with anterior hip dislocation than with posterior dislocation.
d. 70% of the articular surface of the femoral head is sharing in the weight bearing of the body.
e. Loose osteochondral segment are excised despite its size.

50) Regarding knee ligaments injury , all true EXCEPT :

a. ACL injury is the commonest cause of acute haemarthrosis.
b. In acute ACL injuries the medial meniscus found to be injured more than lateral meniscus.
c. MCL injury remains the most common isolated knee ligament injury.
d. Around 50% of patients with ACL tear have meniscal tear.
e. Most ACL injuries are associated with haemo-arthrosis.

51) Concerning the tests for knee ligament injury all of the folowing are correct EXCEPT:
a. Lachman test for ACL injuries.
b. Posterior drawer test at 90^0 for PCL tear.
c. Anterior drawer test at 90^0 is not specific for ACL tear.
d. Valgus laxity at 0 degree for MCL.
e. Posterior lateral drawer at 30^0 for postero lateral corner injury.

52) All are true regarding knee dislocation EXCEPT:
a. Dislocations are classified by the position of the tibia.
b. Any patient with ACL and PCL rupture should have dislocated knee with spontaneous reduction.
c. Peroneal nerve injury occurs in 70 % of cases.
d. Current indications for surgery is entrapment of MCL.
e. Ligamentous reconstruction can be delayed four weeks.

53) Regarding meniscal injuries of the knee joint , all are true EXCEPT :
a. It is usually due to twisting on a weight bearing knee.
b. Medial meniscus tear found more commonly.
c. Meniscal cyst found more in the medial meniscus.
d. OA changes occur after menisectomy.
e. Peroneal nerve injury can be a complication of meniscal repair.

54) Regarding PCL rupture , all true EXCEPT:
a. Isolated PCL rupture usually presented with instability.
b. Isolated PCL rupture usually presented with pain.
c. Non surgical treatment is an option.
d. OA of patello femoral and medial compartment occur in PCL deficient knees.
e. Postero lateral corner injury is common association with PCL tear.

55) In external fixation for fracture pelvis all are true EXCEPT:
a. Fast and effective method of early stabilization.
b. Reestablish pelvic ring and pelvic volume
c. Decreases blood loss in pelvic fractures.
d. Best used for patients with floating iliac wings.
e. External fixation does not provide rigid stability for posterior structures of the pelvis.

56) In angiography for pelvic bleeding all are true EXCEPT:
a. small percentage of patients with pelvic fractures will benefit from angiography and immobilization
b. The majority of blood loss is arterial
c. Prior to angiography other sources of bleeding should be ruled out
d. Stabilization of the fracture in haemodynamic unstable patients should be done prior to angiography
e. The majority of blood loss is venous.

57) In pelvic fractures all are true EXCEPT:
a. Concomitant urologic injures occur in approximately 15%.
b. Blood at the meatus and high prostate are most common findings of bladder injury.
c. The incidence of bladder injures correlates with the number of pubic rami fractured.
d. Repeated examination of an unstable pelvic fractures may lead to greater blood loss.
e. Urologic injuries are more common in men.

58) All of the following methods can be used in the control of haemorrhage associated with pelvic fractures EXCEPT:

a. Early reduction and immobilization.
b. Embolisation .
c. Inflated inter arterial balloon.
d. Infusion of vasoconstrictor agents.
e. Ligation of bleeding vessels.

59) Concerning fracture pelvis, all of the following vascular disorders are true EXCEPT:
a. Major arterial injury approximately 1%.
b. The internal iliac artery is more susceptable to injury.
c. The external iliac artery is less susceptible to injury.
d. The arterial damage is open variety in most of the cases.
e. Angiography is mandatory in some cases.

60) The most common cause of death in pelvis fractures is:
a. Fat embolism.
b. Metabolic acidosis.
c. Renal failure.
d. Retro peritoneal haematoma.
e. Disseminated intravascular coagulation.

61) Concerning Hangman's fracture of C2 in children all are true EXCPT:
a. It is a traumatic spondylolisthesis of C2
b. Neurologic deficits are very common
c. Most fractures can be seen on lateral and oblique cervical X-ray
d. Treatment include reduction and immobilization in Minerva cast for 8 weeks
e. Surgery is indicated only for delayed union or an unstable non union.

62) In spinal cord injury all are true EXCEPT:

a. Central cord injury is most common type of cord injury
b. Patients with central cord syndrome usually have motor weakness or paralysis in upper and lower extremities
c. Functional recovery is poor
d. In anterior cord syndrome there is preservation of vibration and position sense.
e. Central cord syndrome occurs primarily in the cervical region.

63) In Brown Sequard syndrome all are true EXCEPT:
a. Is a rare spinal cord injury
b. Results from damage to half the spinal cord
c. Has an excellent prognosis for ambulation.
d. Characterized by loss of vibration and positional sense
e. A significant residual spasticity.

64) In Burst fracture of the spine all are true EXCEPT:
a. Are the result of axial loads applied to the spine
b. Most common in lower lumbar spine
c. Anterior and middle columns are always involved
d. It can be stable or unstable
e. Neurological deficit may occur.

65) In compression fracture of the spine all are true EXCEPT:
a. Usually involve anterior and middle columns
b. Often occur in elderly
c. Usually are unstable and require aggressive management
d. Surgery is indicated in unstable fractures
e. Hyper extension orthoses can be useful.

66) The mechanism of seat belt injury is:
a. Flexion.
b. Axial compression.
c. Flexion distraction.

d. Extension.
e. Flexion rotation.

67) In charcot joint , all of the following are true EXCEPT:
a. Treatment usually by external immobilization by cast or orthosis.
b. Differentiation with osteomyelitis can be confirmed by MRI.
c. Arthrodesis is option of treatment.
d. It is usually painless deformity.
e. Skin ulcerations should be treated before surgical stabilization.

68) Concerning osteoarthrosis (OA) , all are true EXCEPT:
a. Primary OA is more common than the secondary .
b. Molecular marker found to be useful in diagnosis and response to treatment.
c. Autogenous chondrocyte transplantation is one of the new promising technique.
d. Non steroidal anti inflammatory drugs(NSAIDs) is the main stay of treatment.
e. Intra articular hyaluronic injection become widely used.

69) About villonodular synovitis , are true EXCEPT:
a. Shoulder joint is the most common involved.
b. The patient complains from intermittent pain and effusion.
c. Microscopic appearance is similar to giant cell tumour of tendon.
d. Treatment is by synovectomy.
e. Radiotherapy may by justified if surgery failed.

70) Regarding paget's disease of bone , all true EXCEPT:
a. Characterised by high rate of bone resorption and formation.
b. Malignant changes occurs in polystotic form.
c. It may lead to high out put cardiac failure.
d. Difficult to internally fix due to bone sclerosis.
e. Fracture is common in weight bearing bone.

71) Regarding osteochondritis , all are true EXCEPT:
a. It affects mainly the lateral femoral condyle.
b. May follow large doses of corticosteroids.
c. Usually occurs in young adults.
d. It may be due to repeated minor trauma.
e. If large fragment become detached should pinned back in position.

72) In chondrocalcinosis , all are true EXCEPT:
a. Is due to deposition of clacium pyrophosphate dihydrate crystals in articular cartilage.
b. Chronic chondro clacinosis usually painful.
c. Pre dispose to osteo arthrosis.
d. May be associated with hyperparathyroidism.
e. It is usually idiopathic.

73) Regarding gout , all are true EXCEPT:
a. It is due to uric acid crystal deposition in the synovium, joint cartilage.
b. It is more common in females.
c. Rarely seen before menopause.
d. X-ray may show ill defined bone destruction resemble malignant disease.
e. Diagnosis by finding urate crystals in synovial fluids.

74) Regarding osteopetrosis , all are true EXCEPT :
a. The bones are dense and structures.
b. Osteopetrosis tarda inhereted as dominant.
c. Osteopetrosis congenita inhereted as recessive.
d. Osteopetrosis congenita is the commonest form.
e. Surgery is very different due to bone density.

75) In recurrent dislocation of patella , all of the following are true EXCEPT:
a. May be secondary to weak muscle.
b. May caused by generalised joint hypermobility.

c. More common in young adult males.
d. Usually to the lateral side.
e. It may be secondary to genu valgum.

76) Regarding meniscus injury , all are true EXCEPT:
a. Locked knee means lack of full extension.
b. Medial meniscus injured is more than the lateral one.
c. The anterior horn of medial meniscus injured more than the posterior horn.
d. Posterior horn tear rarely cause locking.
e. Grinding test is positive in meniscus injury.

77) A 50 years old female lady with advanced osteoarhtrosis secondary to high bilateral C.D.H one of the following surgical procedures is INCORRECT:
a. Debridement of the joint and capsulectomy.
b. Osteotomy of the greater trochanter and resection of 2 cm from the proximal femoral metaphysis may be necessary to permit reduction of the joint.
c. Adductors tenotomy.
d. The cup should be seated in the false acetabulum.
e. It may be necessary to use part of the resected femoral head as bone graft to the postero superior part of the acetabulum.

78) Concerning charlley T.H.R one of the following is incorrect:
a. The diameter of the head of the femoral component is 22 mm.
b. The smaller the surface area of the head, the less the pressure per unit surface.
c. Theoretically smaller head prosthesis should dislocate easily than a larger one.
d. Cups with extended posterior walls are available to resist posterior dislocation.
e. If the cup is inserted in (10-15) degrees of a inteversion the flexion abduction and external rotation beyond 90^{0} degrees are possible with out impingement.

79) In failed T.H.R. one of the following is INCORRECT :
a. Fracture of the femoral stem usually starts in the antero-medial surface of the stem.
b. Boundary lubricant reduces friction by inter action with the surface.
c. A porous coated stem is having 3-7 times greater surface area than smooth stems.
d. Inserting (polymethly methacrylate) into the femoral canal may cause peripheral vasodilatation.
e. Wear and tear of the cup is related to the large diameter of the head.

80) Regarding T.H.R , one is false:
a. The stem of the femoral component breaks in the area of maximum tensile stress.
b. A valgus position of the femoral component more than 140 degrees decreases the movement of bending.
c. The ratio of the length of the lever arm of the body weight to that of the abductor musculature is about (4-5)
d. In straight leg raising the load on the head of femur is 3 times the body weight.
e. A varus position of the femoral component decreases the axial loading on the stem.

81) Regarding hallux vlagus, one is false:
a. Footwear has role in the etiology of the disease.
b. The valgus posture of the great toes frequently causes a hammer second toe.
c. Conservative treatment should be first tried.
d. Osteoarthrosis frequently develops at the first Meta tarsophalangeal joint.
e. Dome osteotomy of the base of the first metatarsal is the recommended to patient between 12-17 years.

82) Regarding arthrodesis of the ankle joint, one is false:
a. Arthrodesis can be obtained more readily by compression fusion than by other methods.
b. Arthrodesis is performed more frequently than arthrodesis of other large joints.
c. Too much equines of the arthrodesed joint will result in lack of push off.
d. Traumatic arthritis is one of the most indication for arthrodesis.
e. In TB of the ankle the subtalar arthrodesis together with ankle arthrodesis is recommended.

83) Regarding tarsal tunnel syndrome, one is false:
   a. Symptoms may resolve post partum.
   b. Calcaneal fracture may be the cause.
   c. Elevation of the limb minimize the symptoms.
   d. The nerve may be constricted by pressure from without the tunnel.
   e. The nerve is constricted beneath the flexor retinaculum.

84) Concerning idiopathic scoliosis, one statement is correct:
   a. Male to female ratio is 5:1.
   b. Lumbar curves is more common.
   c. Physiotherapy and exercises are the best method of treatment.
   d. Bracing and casting are indicated in skeletally matured patients with curves of less than 40 degrees.
   e. Adolescent scoliosis is the most common form of spinal deformities in our country.

85) In adolescent idiopathic scoliosis, all true EXCEPT:
   a. School screening program for children 10-16 years of age is an effective method to prevent progression of spinal deformities.
   b. Indication for non operative treatment is a curve of 25-30 degrees, in a patient who has one year of growth remaining.
   c. The thoracic curves are more common in idiopathic scolosis.
   d. Non progressive curves of 20-40 degrees in skeletally mature patients require treatment.
   e. 90% of this type occurs in girls.

86) In Scoliosis, all true EXCEPT:
   a. The primary goal of orthotic treatment is to prevent curve progression.
   b. Two-stage (anterior and posterior fusion) is indicted for curves greater than 100 degrees, that are very stiff.
   c. Flexibility of the curves may be calculated by bending supine radiograms.
   d. On set type, of the curves and maturity of the patients are very important prognostic factors.
   e. Brace treatment is best, in curves 40 degrees and above.

87) Scoliosis may be seen in all EXCEPT:
   a. Cerebral palsy.
   b. Charcot-Marie-Tooth disease.
   c. Arthrogryposis.
   d. Casion disease.
   e. Syringiomyelia.

88) The indications for cessation of brace treatment in scoliosis are the following EXCEPT:
   a. The attainment of an adequate age for fusion if the curve is still progressing.
   b. Failure of the curve to respond to bracing.
   c. Skin problems making bracing impossible.
   d. Incomplience of the patient and family.
   e. Progressive curve of 20 degrees in a growing.

89) Characteristic features of neurofibromatosis include all of the following, EXCEPT:
   a. Café-au-lait spots.
   b. Spinal and skeletal deformaties.
   c. Lisch nodules of the iris.
   d. Acoustic neurofibromatosis.
   e. Nystagmus.

90) In low back pain and sciatica, the differential diagnosis include all of the following EXCEPT:
   a. Epidural abscess.
   b. Neoplastic vertebral destruction.
   c. Ankylosing spondilitis.
   d. Teit's syndrome.

e. Bahcet's disease.

91) Early postoperative spinal complications, include all of the following EXCEPT:
   a. Haematoma.
   b. Paresis.
   c. Paralytic ileus.
   d. Acute disciitis.
   e. Deep venous thrombosis.

92) Causes of poor results of operative treatment in disc disease, include all of the following EXCEPT:
   a. Poor patient selection
   b. Arachnoiditis
   c. Exact segment and level exploration during sugery.
   d. Presence of an extradural or intrathecal tumour.
   e. Iatogenic complication, (i.e. neural tissue mishandling).

93) In spondylolisthesis all of the following are true EXCEPT:
   a. Defined as a slipping forward of one vertebra on another.
   b. Dysplastic type is a congenital deficiency of the superior sacral .
   c. Isthmic type is the lesion that is located in the bars interarticularis segment.
   d. Pathological type is an attenuation of the pedicles secondary to generalized bone disease.
   e. Traumatic is defined as an acute fracture of the body of the vertebra.

94) The following are characteristics of pain referred from facet joints or ligaments, EXCEPT:
   a. Pain radiates to proximal party of the limb (upper thigh to knee).
   b. Pain is more marked proximally.
   c. EMG showed delayed nerve conduction.
   d. No numbness or parasthesia.
   e. No neurological deficits.

95) Marfan's syndrome is characterized by all EXCEPT:
   a. Tendency to tall stature.
   b. Increased homocystine in the urine.
   c. Lens subluxation.
   d. Scoliosis.
   e. Family history suggesting autosomal dominant inheritance.

96) Jefferson's fracture is :
   a. Fracture of C1.
   b. Fracture of the odontoid.
   c. C2 fracture.
   d. C3 fracture.
   e. C5 fracture.

97) Cervical traction is best performed in sitting position, with the neck in :
   a. Neutral position.
   b. Extension position.
   c. Flexion position.
   d. Rotated position.
   e. Lateral bending position.

98) The following are specific events of phases of healing of acute primarily closed wound, EXCEPT:
   a. Coagulation.
   b. Inflammation.
   c. Lag phase.
   d. Fibroplasia.
   e. Remodeling.

99) Regarding collagen synthesis and deposition, the following are true EXCEPT:
   a. Collagen is the major component of extra of soft tissue tendons ligaments and bone.

b. Collagen is synthesized on ribosomes on the rough endoplasmic reticulum.
c. Lack of ascorbic acid and oxygen compromise collagen production leading to insufficient wound strength.
d. The collagen molecule is formed of three polypeptide chains stabilised to one another by covalent bonds.
e. D-penicillamin is a collagen cross link inhibitor.

100) Osteogenesis imperfecta is associated with a defect in the synthesis of :
a. Type I collagen.
b. Type II collagen.
c. Type IV collagen.
d. Chondroitin sulfate.
e. Keratan sulfate.

THE KEY

1) A	36) A	71) B	
2) B	37) D	72) B	
3) D	38) D	73) B	
4) A	39) C	74) D	
5) B	40) A	75) C	
6) D	41) D	76) C	
7) C	42) D	77) D	
8) A	43) E	78) B	
9) E	44) E	79) A	
10) A	45) D	80) C	
11) E	46) E	81) E	
12) C	47) E	82) C	
13) C	48) E	83) C	
14) C	49) E	84) E	
15) D	50) B	85) D	
16) E	51) D	86) E	
17) A	52) C	87) D	
18) C	53) C	88) E	
19) A	54) A	89) E	
20) B	55) D	90) D	
21) E	56) B	91) D	
22) A	57) B	92) C	
23) C	58) D	93) E	
24) C	59) D	94) C	
25) D	60) D	95) B	
26) A	61) B	96) A	
27) C	62) B	97) C	
28) D	63) D	98) C	
29) D	64) B	99) D	
30) D	65) C	100) A	
31) B	66) C		
32) E	67) B		
33) D	68) C		
34) E	69) A		
35) D	70) A		

1) Interleukin – 1 promote rapid synthesis of all of the following liver proteins EXCEPT:
   a- C-reactive protein.
   b- Ceruloplasmin.
   c- Fibrinogen.
   d- Albumin.@
   e- Complement factors.
2) The release of all the following hormones increase proportional to the severity of injury EXCEPT :
   a- Glucagon.
   b- Cortisol.
   c- Angiotensin II.
   d- Insulin.@
   e- Arginine vasopressin (ADH).
3) Tachycardia in a patient undergoing surgery on his lower limbs under spinal anesthesia during surgery can be caused by the following EXCEPT:
   a- Hypovolemia due to blood loss.
   b- Emotional.
   c- Catecholamine release that induced by the efferent pathways from the wound to the hypothalamus.@
   d- Unrecognized previous coronary artery disease.
   e- Gradual loss of anaesthetic effect after lengthy surgery time.
4) Concerning renal function in normal situation, all are true EXCEPT:
   a- 25 percent of the cardiac out put is directed to the kidneys.
   b- Glomerular filtration rates remain unchanged desite reduction of renal perfusion pressure to 80 mm Hg.
   c- The re-absorption of sodium in the lope of Henley is passive and follows absorption of hydrogen ions@.
   d- Head injury may cause excessive loss of water in the distal convoluted tubules and collecting duct.
   e- The most common electrolyte abnormality observed following surgery and injury is iatrogenic hyponatermia.
5) Homeostasis in the first 24 hours after acute hemorrhage takes place by all of the following EXCEPT:
   a- Albumin derived from the liver.@
   b- Mobilization of fluid and electrolytes from the interstitial spaces to the intravascular spaces.
   c- Vasoconstriction.
   d- Decrease renal loss of water by effect of arginine – vasopressine.
   e- Decrease renal losses of electrolyte bye effect of steroids.
6) Regarding human body magnesium, all are true EXCEPT:
   a- The total body content of magnesium in the average adult is 2000 meq.
   b- Half of body Mg is incorporated in bone.
   c- Normal serum magnesium concentration ranges between 1.5 – 2.5 meq/L
   d- The normal dietary intake of magnesium is approximately (240 mg) daily.
   e- Magnesium deficiency is characterized by hyporeflexia.@
7) Concerning high out put renal failure, all are true EXCEPT:
   a- May result from hypoxic damage to the distal tubules and collecting duct.
   b- Is the most common type of renal failure following severe injuries or operative trauma?
   c- Uremia occurs without a period of oligurea.
   d- The chief danger is failure to recognize its existence and inappropriate administration of potassium.
   e- The lesion is characterized by normal glomeular filtration rate but complete resistance to vasopressin.@

8) In patient with thrombocytopenia, the minimum blood platelet count necessary for safe elective surgery is :
   a- Twenty thousand / mm^3.
   b- Fifty thousand / mm^3.@
   c- One hundred thousand / mm^3.
   d- One hundred and twenty thousand / mm^3.
   e- One hundred and fifty thousand / mm^3 .
9) Concerning massive blood transfusion, all are true EXCEPT:
   a- The term implies a single transfusion more than 2500 ml transfusion over 24 hours.
   b- Warming of the blood decrease the incidence of cardiac arrest.
   c- If diffuse bleeding occurs platelet and coagulation screening should be done.
   d- The physiologic sequences of citrate toxicity are very significant.@
   e- The increased potassium content of the stored blood does not provide clinical severe oligurea.
10) In clostridium myonecrosis management in adjunction with early debridement and good drainage, the antibiotic of choice is :
   a- Chloramphenicol.
   b- Cephalosporins.
   c- Amilcacin.
   d- Penicillin G.@
   e- Gentamycin.
11) A patient fainted after exposure to painful maneuver (impression that he got neurogenic shock) he is expected to get :
   a- Cool, moist skin.
   b- Decreased peripheral vascular resistance.@
   c- Increased cardiac output.
   d- Decreased urine output.
   e- Decreased blood volume.
12) The most common cause of gram negative infection in hospitalized adult is :
   a- Bladder catheterization.@
   b- Tracheotomy.
   c- Exogenous theatre acquired wound infection.
   d- Post partum genital infection.
   e- Surgery on gastrointestinal tract.
13) Ventilation with positive end expiratory pressure (PEEP) can achieve all of the followings EXCEPT:
   a- Providing positive pressure throughout the ventilator cycle.
   b- Decrease pulmonary shunting.
   c- Increase ventilation to perfusion ration.
   d- Increase compliance, functional residual capacity and partial oxygen tension.
   e- Squeeze out interstitial fluid to the circulation.@
14) Which of the following retroperitoneal hematomas should not be explored:
   a- A large expanding peritoneal hematoma.
   b- A large non-expanding pelvic hematoma.@
   c- A small centrally located non-expanding hematoma superior to the pelvis.
   d- A large non-expanding hematoma over the head and body of the pancreas.
   e- A small non-expanding hematoma over the body of the pancreas with intact pancreatic capsule.
15) Local environmental factor that may permit wound infection include all of the following EXCEPT:
   a- Leaving devitalized tissue in the wound.
   b- Fluid collection and edema in the wound and around it.
   c- Peripheral vascular disease.

d- Hypoxia produced by shock or anemia.
e- Keeping the suspicious wounds open for repeated wound toweling.@

16) The minimum urine output for 24 hours required to excrete end products of protein metabolism is :
a-200 ml

b-400 ml@

c-600 ml

d-800 ml

e- 1000 ml

17) The single most important factor in determining whether to perform a transplant between a donor and a recipient is:

a- Mixed lymphocyte culture assays of the donor and recipient.
b- HLA type of the donor and recipient.
c- ABO blood types of the donor and recipient.@
d- Closeness of relationship between the donor and recipient.

e- Cytotoxicity test

18) Cells involved in the mechanism of allograft rejection include all the following EXCEPT:
a- B cells.
b- T cells.

c- Eosinophils.@

d- Macrophage
e- Polymorphonuclear cells.

19) All the following are side effects of cyclosporine A administration EXCEPT:
a- Hepatototoxicity
b- Hirsutism
c- Tremor
d- bone marrow depression@
e- Nephrotoxicity

20) In diabetic acidosis one of the following is true:
a- Hypertension

b- Elevation of blood sodium

c- Hypervolemia

d- Fatal hyperkalaemia may develop with insulin treatment.@

e- D.V.T.

21) Concerning collagen all the following are true EXCEPT:
a- Is composed of three polypeptide chains.
b- Lack of ascorbic acid or oxygen will compromise collagen production

c- Collagen function is to allow tissue to expand and contract@

d- Collagenase can be inhibited by alpha-2 macroglobulin.

e- Collagen is unique because it contains hydroxyproline.

22) Regarding chronic wounds all the following are true E XCEPT:

a- Are the wounds that fails to heal because of underlying pathologic condition.
b- Best treated by excision and graft.@

c- Basic biologic mechanism of healing is contraction.
d- usually minimal epithelisation is required for healing
e- One of the most costly unsolved problems is health care.

23) All the following about bone metastases are true EXCEPT:

a- Common in patients with prostate or breast cancer.
b- Usually medullary in location and destructive in nature
c- Usually osteolytic in appearance and provide little bone formation
d- Axial metastases account for up to 15% of lesions – spine and ribs.@
e- Prostatic cancer cause osteoblastic metastases.

24) In incisional biopsy all the following are true EXCEPT:

a- Incisional biopsy include removal of a portion of a tumor during endoscopy
b- May be performed using a scalpel or a core biopsy punch.

c-Indicated for tumors 3-4 cm diameter@

d-The wound should be totally excised at the definitive surgical procedure
e- Negative biopsy does not preclude the presence of cancer in the remaining mass.

25) All are possible causes of fever 24- 48 hours post-operative EXCEPT:

a- Respiratory complications.
b- Catheter related complications.
c- Persistent atelectasis.
d- Wound infection.@
e- Thrombophlebitis.

26) Concerning fat embolism all are true EXCEPT :

a- Respiratory insufficiency occur in 75% of patients.
b- Hypoxemia precede the development of dyspnea and tachypnea.
c- Chest radiographs findings are usually absent in the early phases.
d- Neurologic involvement usually develop in the absence of pulmonary abnormality.@
e- Most commonly follows orthopaedic injuries.

27) The most common cause of pulmonary edema in surgical patients is:

a- Atrial fibrillation.
b- overload of infused fluids.@
c- pulmonary hypertension.
d- inadequate analgesia.
e- Hypertension.

28) The most common cause of death in patients with acute renal failure is :

a- Respiratory failure.
b- Cardiac failure.
c- Hemorrhage.
d- Infection.@
e- Malnutrition.

29) All are true concerning deltoid muscle EXCEPT :

a- Principal abductor of humerus.
b- Arises in part from the lateral third of the clavicle.
c- Innervated by the axillary nerve.
d- Works synergistically with biceps brachia.@
e- Inserts into the lateral surface of the humerus.

30) The floor of the biciptal groove is the point of insertion of the :

a- Subscapularis.
b- Pectoralis major.
c- Latismus dorsi.@
d- Teres major.
e- Teres minor.

31) All of the following muscles have their origin on the humerus EXCEPT :

a- Brachioradialis
b- Extensor Capri radialis longus.
c- Teres minor.@
d- Brachialis.
e- Anconeous.

32) A deep laceration through the anatomical snuffbox might be expected to Injure, one of the following:

a- Ulnar nerve.
b- Median nerve.
c- Radial nerve.
d- Ulnar artery.
e- Radial artery.@

33) One of the following is true, concerning the innervation of the lumbrical muscle:

a- All are innervated by ulnar nerve.
b- Two lateral lumbricals by ulnar two medial by median.
c- Two medial lumbricals by ulnar two lateral by radial.
d- Two lateral lumbricals by median two medial by radial.
e- Two medial lumbricals by ulnar, two lateral by median.@

34) Which of the following muscles is involved in extension of the arm at the shoulder joint:

a- Coracobrachialis.
b- Supraspinatus.
c- Pectoralis major.
d- Teres major.@
e- Biceps brachii

35) The floor of the antecubital fossa is formed by the brachialis muscles and the :

a- Pronator teres.
b- Supinator.@
c- Biceps brachii.
d- Brachioradialis.
e- Bicipital aponeurous.

36) All the following muscles are involved in abduction of the arm to 180 ° EXCEPT:

a- Supraspinatus.
b- Deltoid.
c- Subscapularis.
d- Tarpizius.

e- Latissimus dorsi@

37) Concerning the anatomical snuffbox , all are true Except :
a- It is bounded by the tendor of extensor pollicis longus posteriorly.
b- It is bounded by the tendous of abductor pollicis longus and extensor pollicis brevis anteriorly.
c- Its floor consists of the styloid process of the radius, scaphoid bone, the trapezium and bone of 1st MCB.
d- It is crossed by the basalic vein.@
e- It contains the radial artery.

38) The adductor canal contains all of the following structures EXCEPT :
a- Femoral nerve.@
b- Femoral artery.
c- Femoral vein.
d- Saphenous nerve.
e- Nerves to the vastus medialis.

39) All of the following muscles contributes directly to the stability of the knee joint EXCEPT :
a- Semi membranous.
b- Sartorius.
c- Biceps femoris.
d- Gastro enemius.
e- Soleus.@

40) All of the following boundaries of the femoral ring EXCEPT :
a- Femoral vein.
b- Lacunar ligament.
c- Femoral artery.@
d- Superior ramus of pubis.
e- Inguinal ligaments.

41) The following muscles are formed the floor of the femoral triangle EXCEPT :
a- Pectineus.
b- Adductor longus.
c- Iliacus.
d- Psoas.
e- Adductor brevis.@

42) All of the following muscles arise from the calcaneum EXCEPT :
a- Flexor digitorum brevis.
b- Extensor digitorum brevis.
c- Quadratus plantae.
d- Flexor hallucis brevis.@
e- Abductor hallucis.

43) Concerning the acetabulum , all of the following are correct EXCEPT :
a- The anterior 2/5 formed by the pubis.@
b- The acetabular notch bridged by the transverse ligament.
c- Its directed lateraly, downwards and forward.
d- The fossa is filled with fat.
e- The articular surface called the lunate surface.

44) The following statements are correct EXCEPT :
a- The ant. Sup. Iliac spine is the origin of the sartorius muscle.
b- The adductor longus arises from the front of the body of pubis.
c- The gluteus maximus muscle arises anterior to the posterior gloteal line.@
d- The cremasteric muscle inserted to the pubic tubercle.
e- Pubic crest gives origin to rectus abdominis and pyramidalis muscles.

45) All of the following about sesamoids are correct EXCEPT :
- a- Minimizes friction of the tendons across bones and ligaments.
- b- Modify pressure on the tendons so no obstruction to its blood supply occurs.
- c- Two of them presented in the tendon of adductor pollicis.
- d- The fabella is a sesamoid presented in the med. head of gastro cneumeus.@
- e- Alter the direction and the line of pull of certain muscles.

46) Ilio tibial tract is a thickened band of fascia lying on the lat. Aspect of the thigh, the following are its attachements EXCEPT :
- a- Lat. border of patella.
- b- Lat. condyle of femur.
- c- Lat. Condyle of tibia.
- d- Head of fibula.
- e- Tendon of vastus lateralis.@

47) About the compartmetns of the thigh, all are correct EXCEPT:
- a- There are three compartments.
- b- The lateral intermuscular septum is the strongest of the septa.
- c- The adductors are innervated by the obturator nerve.
- d- The medial compartment innverated by the femoral nerve.
- e- The post. Compartment contains the flexors of the knee.@

48) All the following are branches of the sacral plexus EXCEPT :
- a- Sup. Gluteal nerve.
- b- Post. cut. Nerve of thigh.
- c- Nerve to obturator internus.
- d- Nerve to quadratus femoris.
- e- Medial cutaneous nerve of thigh.@

49) The following statements are correct EXCEPT:
- a- Total paralysis of the adductor magnus with injury of the obturator nerve.@
- b- The 4th layer of the foot contains the plantar and the dorsal interossei.
- c- The action of articularis genu muscle is to prevent the synovium from being insinuated between the patellar and femur.
- d- The five genicular arteries are branches of the popliteal artery.
- e- The peroneus tertius is contained in the anterior compartment of the leg.

50) All of the following are cells of connective tissue EXCEPT :
- a- Mast cells.
- b- Plasma cells.
- c- Peri cytes.
- d- Red blood cells.@
- e- Eosinophil granulo cytes.

51) Regarding amyloidosis , all are true EXCEPT:
- a- Any organ may be involved.
- b- Death usually due to liver involvement.@
- c- Secondary amyloidosis is the commonest.
- d- Diagnosis usually by biopsy from gingiva or rectum.
- e- Amyloid contains components of immunoglobulins and other component.

52) About tests of bleeding disorders , all are true EXCEPT :
- a- P T T is the test for intrinsic system and common pathway.
- b- Prothrombin time is the test for common pathway.@
- c- Bleeding time increased in failure of vascular contracture.
- d- Bleeding time increased due to inadequate platelet activity.
- e- If both P T T and P T are normal the defect is in the vessel wall or platelet.

53) Regarding parathyroid hormon , all are true EXCEPT:
- a- It stimulates the action of osteoblasts.@

b- Increase phosphate excretion.
c- Plasma phosphate level decrease.
d- Increase phosphate calcium excretion.
e- It increases synthesis of 1-25 dihydroxy chole calciferol.

54) All are true regarding vitamin D , EXCEPT :
a- Natural vitamin D is produced in the skin by ultra violet radiation.
b- Main action of vitamin D is to aid re-absorption of calcium from the kidney.@
c- In physiological levels vitamin D has no direct effect on bone.
d- In pharmacological doses it exhibits parathyroid hormon like action.
e- Vitamin D is more important than parathyroid hormon in clacium homeostasis.

55) The following are causes of hyper calcemia EXCEPT:
a- Sarcoidosis.
b- Immobilization.
c- Magnesium deficiency.@
d- Destructive bone lesion.
e- Addison's disease.

56) In heterotopic calcification , all are true EXCEPT:
a- Heterotopic calcification is calcium salt deposition in tissues other than osteoid or enamel.
b- Metastatic calcification occur in dead tissue.@
c- Dystrophic calcification occurs in degenerate tissue.
d- Dystroophic calcification occur in dead tissue.
e- Metastatic calcification occurs in apparently normal tissue.

57) Regarding woven bone , all true EXCEPT:

a- It is seen in fracture healing.
b- It is seen in osteogenic tumour.
c- Muco protein matrix is more than mature bone@.
d- It is found in membranous bone, during embryonic development.
e- There is irregular arrangement of collagen bundles and osteocytes.

58) All statements about clostridial organisms are true EXCEPT:
a- It is gram negative bacilli.@
b- It is spore forming organism.
c- It is toxic organism and produce exotoxins.
d- They are obligatory anaerobes.
e- These organisms resistant to heat and desiccation.

59) In hospital infection , all of the following are true EXCEPT:
a- If the organisms dervied from external sources, it is called cross infection.
b- If the organism dervied from the patient himself , it is called auto infection.
c- There is no relation between the wound size and the incidence of hospital infection.@
d- Wound infection increase with the duration of operation.
e- Wound infection increase in the presence of drainage tubes.

60) The normal level of ionized calcium in the plasma is maintained by the following mechanisms EXCEPT :
a- The secretion of calcitonin.
b- The presence of $1,25\ (OH)_2\ D_3$.
c- Parathyroid hormone secretion.
d- Renal tubular conservation.
e- The circulating level of magnesium.@

61) Concerning neuromuscular transmission in man, all are true EXCEPT :
a- Calcium entry into the presynaptic terminal is an essential step in the release of transmitter following an action potential in motor nerve.
b- Succinylcholine causes depolarization of the postsynaptic membrane.

c- Blockade of transmission by curare is by competitive inhibition of the receptions on the post synoptic membrane.
d- The blockade of the transmission by curare can be antagonized by an anticline terease.
e- Spontaneous release of transmitter occurs in the presence of action potential in the motor nerve.@

62) Concerning the knee jerk reflex in a normal adult human , one of the following is correct :
a- The reflex response time is about 1-m sec.
b- The reflex response time is about the same as the subjects' time.
c- The reflex is monsynaptic.@
d- The associated inhibition of motion neurons supplying antagonists is monsynoptic.
e- The amplitude of the reflex contraction can't be voluntary influenced by the subject.

63) An hour after an uncomplicated transection of spinal cord at the level of C8 in an adult human, one of the following is correct:
a- An inselateral extensor plantar response (babinski positive).
b- Ispelateral spasticity below the level of the lesion.
c- Loss of temperature sense in the ipselateral leg.@
d- Loss of position sense in the ispelateral leg.
e- Loss of crude touches sense in the ipselateral leg.

64) Injections of parathyroid hormone leads to all of the following EXCEPT:
a- Increased in urinary phosphate.
b- Increased production of dihyro-xycholecalcifferol in the kidney.
c- An increase in the number of osteoblasts.@
d- A rise in plasma calcium.
e- Increased re-absorption of calcium in the kidney.

65) Concerning bone in the mature person all are true EXCEPT :
a- Three quarters of the substances are minerals.
b- Bed rest can deplete the mineral content.
c- Osteoblasts are associated with areas where resumption is taking place.@
d- Alkaline phosphates are associated with the lying down of mineral.
e- Calcitonin moves calcium out from the plasma and interstitial fluids.

66) A low serum calcium may be associated with, all of the following EXCEPT :
a- Hyperexcitability of peripheral nerves.
b- Reduced calcitonin release.
c- Decrease serum phosphate concentration.@
d- Vitamin D deficiency.
e- Reduced parathormone release.

67) All of the following about active transport across cell membrane, are true EXCEPT:
a- Increased by hypothermia.@
b- Transfer hydrogen ions into gastric juice against a concentration gradient.
c- Requires energy production by the cell.
d- Aids hydrogen ion secretion by kidney tubule cells.
e- Prevents excess of water from entering the cell.

68) Following moderate blood loss (500 ml), all of the following are correct EXCEPT:
a- The arterial blood pressure may be normal.
b- Skin vessels are constricted.
c- Lymph flow from peripheral tissue is diminished.
d- The maintenance of brain blood flow is mediated by cerebral vasoconstriction.@
e- There are nothing happened which could increase extracellular assimilate.

69) Wound healing is enhanced by the following EXCEPT:
a- A balanced diet.
b- Zinc.
c- Cortizol@
d- Oxygen.

e- Vit. C.

70) Ischaemic necrosis is a recognized complication of fractures of the following EXCEPT
a- Talus.
b- Os-calcis.@
c- Scaphoid.
d- Navicular.
e- Femoral head.

71) Metaplasia, , occurs in the following tissue EXCEPT :
a- Connective tissue elements.
b- The gastrointestinal tract.
c- The central nervous system.@
d- The biliary system.
e- The urothelium.

72) Malignancy may complicate the following chronic inflammatory diseases EXCEPT:
a- Chronic osteomyelitis.
b- Sarcoidosis.@
c- Asbestosis.
d- Schistossomiasis.
e- Ulcerative colitis.

73) The destruction of bone is associated with the following biochemical changes EXCEPT:
a- An increase secretion of hydroxyproline in the urine.
b- An elevated alkaline phosphatase.
c- An elevated acid phosphatase.@
d- An elevated serum calcium.
e- Depression of the serum phosphate.

74) Concerning calcium metabolism, all true EXCEPT:
a- The adult body contains approximately 1100g of calcium (1.5% of body weight).
b- 99% of the calcium is in the skeleton.
c- Most of the plasma calcium is bound to protein.@
d- 1,25-dihydroxycholecalciferol regulates d- the absorption of Ca++ from the G.I Tract.
e- About 60% of the reabsorption occurs in the proximal tubules and the reminder in the ascending limb of the loop of Henle and the distal tubule.

75) Growth is a complex phenomenon that is regulated by all of the following EXCEPT:
a- Growth hormone.
b- Insulin.
c- Glucocorticoids.
d- Thyroid hormones.
e- Rennin.@

76) The anterior lobe of the pituitary gland secretes the following hormones, EXCEPT:
a- Thyroid-stimulating hormone.
b- Adrenocorticotropic hormone.
c- Vasopressin.
d- Prolactin@.
e- Luteinizing hormone.

77) The key histologic finding in eosinophilic granuloma is :
a- Plasma cells.
b- Multinucliated giant cells.
c- Eosinophils.
d- Eosinophilic histocytes.@
e- Lymphocytes.

78) Plain radiographs of which of the following soft tissue sarcoma is most likely to show peripheral mineralization ?
a- Malignant fibrous histocytoma (MFH).

b- Synovial sarcoma.@
c- Rhabdomyosarcoma.
d- Clear cell sarcoma.
e- Epithelial sarcoma.

79) The most common primary malignant tumour of bone is :
a- Osteosarcoma.
b- Ewings sarcoma.
c- Myeloma.@
d- Chondrosarcoma.
e- Malignant fibrous histocytoma.

80) Staging soft tissue sarcoma according to American Joint Committee on cancer (AJCC) system, the following is correct EXCEPT:
a- G1 T2 N0 M0 is stage IB.
b- G1-2 T2b N0 M0 is stage IIB.@
c- G2-4 T2b N0 Mo is stage III.
d- Gany Tany N1 m0 stage IV A.
e- Gany Tany Nany M1 stage IVG.B

81) Staging malignant bone tumours according to Enneking classification, the following is true EXCEPT:
a- G1 T1 M0 is stage IA.
b- G1 T2 M0 is stage IB.
c- G1 T1 M0 is stage IIA.
d- G2 T2 M0 is stage IIB.
e- G2 G2 T2 M1 is stage IIIA.@

82) Regarding immunobiology of the allograft the following is true EXCEPT:
a- All manuals have a major histocompatibility complex (MHC) named according to species.
b- Human lencocyte antigens (HLA) are the gene product of (MHC) in humans.
c- Recipients receiving grafts from donor s with HLA idental matches with them will not reject the graft.@
d- Identical twins will accept grafts from each other without need for immunosuperssion.
e- It is possible to suppress great degree of antigenic incompatibility.

83) In bone and cartilage graft the following is correct EXCEPT:
a- Cancellous bone autograft serve as a source of living bone cells.
b- Cortical bone autograft (fibula) severe to reconstruct skeletal defects without antigenicity problem met in allografts.
c- Fresh cartilage allograft enjoy immunologic privilage of not ned immunosupressive therapy.
d- Freeze drying allograft serve to stimulate osteoinduction.@
e- Cancellous bone autograft serve to stimulate both osteoinduction and osteoconduction.

84) What radiographic finding is the best indications of long bone healing?
a- Diffuse osteopenia near the fracture site.
b- Loss of a distinct fracture line.
c- Dence trabeculae near the fracture line.
d- Restoration of cortical continuity.@
e- Abundant callus with calcifications.

85) Which of the following conditions produces the greater reduction in the torsional strength of tubular bone?
a- Circular defect of one half of the bone diameter.
b- Narrow longitudinal defect equal to the bone diameter in length.@
c- Square defect of one fourth of the bone diameter.
d- Square defect of one half of the bone diameter.

e- 50% reduction of the endosteal bone thickness.

86) Regarding amputations, the following is true EXCEPT:
- a- The metabolic energy cast of walking is inversely proportional to the length of the residual limb.
- b- There is increased oxygen consumption with more proximal amputation.
- c- Functional independence measure (FIM) scores correspond inversly with the length of the residual limb.@
- d- To achieve dynamic control within prosthetic socket muscles should be secured at dynamic length to bone (myodesis).
- e- In vascular transfermoral amputees the metabolic cost of walking produced walking outside of the home.

87) Regarding haemophilia in orthopaedic practice the following is true EXCEPT:.
- a- Haemophilia A (factor VIII deficiency) is an inherited sex lined recessive disorder.
- b- The ankle is the least among joint suffering acute hemiarthrosis.
- c- Primary prohpylaxis, the factor replacement is given at the first sign of the bleeding episode.@
- d- Secondary prophylaxis is used after a child has established a pattern of frequent bleeding but before frequent joint bleeds occur.
- e- Management of chronic articular involvement is aimed at preventing further deterioration with prophylactic factor replacement regimen.

88) Distraction osteogenesis DO is a gradual mechanical process of stretching two vascularised bone surfaces apart at the critical rate and rhythem such that new bone forms within the expanding gap, reliably bridges the gap and ultimately remodels to normal structure, the following are true EXCEPT:
- a- Do allows for soft tissues to accommodate by stretching.
- b- Bone formation can be perpetuated for over 10 cm without normal cross sectional area.
- c- Angular lengthening occurs at a rate of 0-25 twice per day for DO to bridge the gap.@
- d- Deformity correction necessitates the measurement of both anatomic and mechanical axes.
- e- The periosteum is the major contributor to osteogenesis during distraction.

89) Regarding the elbow joint, the following are true EXCEPT:
- a- It serves as fulecrum for the forearm lever.
- b- It is a weight bearing joint in patients using crutches.
- c- Axis of rotation for f flexion/ eztension is the center of the trochlea.
- d- Axis of pronation / supination is a line from trochlea through upper ulna to distal radius@.
- e- Dynamic loads around the elbow exceed body weight.

90) Regarding the wrist biomechanics, the following are true EXC:EPT
- a- Flexion/ extension are primarily radiocarpal by 2/3.
- b- Radial deviation is primarily intercarpal movement.
- c- Ulnar dication is intercarpal and radiocarpal movement.
- d- The carpus makes up a system of three links in a chain, radius, lunate, capitate.
- e- Stability depends on the three link system.@

91) regarding hip biomechanics the following are true EXCEPT:
- a- The joint reaction force is 3-6 times body weight.
- b- Joint reaction is due to contraction of muscles crossing the joint.
- c- A cane in the contralateral hand can reduce joint reaction force by 60%.
- d- Trendenburge gait (shifting body weight over the hip) increases joint reaction force.@
- e- Latealization of the greater trochanter reduces the joint reaction force.

92) Regarding biomechanics of the knee joint, the following are true EXCEPT:
- a- At 90^0 degrees of flesion, 45^0 degrees of external rotation and 30^0 degrees of internal rotation are possible.

b- Tibiofemoral joint surfaces are subjected to a loading force equal three times body weight in level walking.
c- Patellofemoral jont load rages from ½ body weight to seven times body weight with squatting and jogging.
d- Arthrodesis position is 0-7^0 degrees valgus, 10-15^0 degrees flexion.
e- Mechanical axis along shafts of femur and tibia.@

93) Regarding biomechanics of the shoulder joint, the following are true EXCEPT:
a- The scapular plane is 30^0 degrees anterior to the coronal plane.
b- Abduction requires external rotation to avoid impingment of greater tuberosity.
c- Abduction is due to glenhumeral motion 90^0 degrees and scapulothoracic motion 90^0 degrees.@
d- Fusion position of 50^0 degrees of true abduction , 20^0 degrees of forward flexion and 25^0 degrees of internal rotation.
e- The glenohumeral ligaments (mainly middle and inferior) and the rotator cuff care mainly responsible for stability.

94) Regarding mechanisms of wound healing, and how they contribute to various types of closure, the following are correct EXCEPT:
a- Collagen synthesis deposition and cross linking are of prime importance in primary repair.
b- Secondary wound closure is carried out by sutures when the wound is clean.@
c- Peroxides and iodopores are to be avoided in open wound dressings.
d- Spontaneous closure of open wounds by contraction is called secondary closure
e- Neodermis is induced by epithelialization in venous stasis ulcers and partial thickness wounds healing.

95) The following are specific events of phases of healing of acute primarily closed wound, EXCEPT:
a- Coagulation.
b- Inflammation.
c- Lag phase.@
d- Fibroplasia.
e- Remodeling.

96) Regarding collagen synthesis and deposition, the following are true EXCEPT:
a- Collagen is the major component of extracellular matrix of soft tissue tendons ligaments and bone.
b- Collagen is synthesized on ribosomes on the rough endoplasmic reticulum.
c- Lack of ascorbic acid and oxygen compromise collagen production leading to insufficient wound strength.
d- The collagen molecule is formed of three ploypeptide chains stabilised to one another by covalent bonds.@
e- D-penicillamin is a collagen cross link inhibitor.

97) Osteogenesis imperfecta is associated with a defect in the synthesis of :
a- Type I collagen.@
b- Type II collagen.
c- Type IV collagen.
d- Chondroitin sulfate.
e- Keratan sulfate.

98) The following are true, of body's fluid and electrolytes EXCEPT:
a- Total body water is 40-45 litres.
b- In the intracellular fluid the principal cation are potassium and magnesium.
c- Potassium, calcium and magneium are necessary for normal cell function.
d- Colloids are responsible to maintain extracellular fluid osmotic pressure.@
e- Rapid depletion of salt from the body leads to circulatory failure.

99) The following are direct and indirect factors in controlling the fluid balance in the body EXCEPT:

a- The sensation of thirst.
b- Antidiuretic hormone of the pitutary gland.
c- About 80% of excreted sodium is normally reabsorbed by the proximal convoluted tubules of glomerule.
d- Baro receptors in bath venous and arterial sides of circulatory tree has no effect on water balance.@
e- Aldosterone hormone of the zona glomerulosa of the adernal cortex.

100) In acid base balance in the body the following are correct EXCEPT:

a- Bicarbonate concentration and partial pressure of CO2 are important factors in maintaining the blood PH at 7-4.
b- PCO2 measurement in arterial blood is an accurate measure of respiratory acidosis or alkalosis.
c- Hyperventilation can produce respiratory alkalosis.
d- In shock patient develops metabolic alkalosis.@
e- In renal disease where anuria or failure of distal renal tubules to fuction, this results in metabolic acidosis.

The KEY

1) D
2) D
3) C
4) C
5) A
6) E
7) E
8) B
9) D
10) D
11) B
12) A
13) E
14) B
15) E
16) B
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91) D
92) E
93) C
94) B
95) C
96) D
97) A
98) D
99) D
100) D

19) Concerning massive blood transfusion, all are true EXCEPT:
- a- The term implies a single transfusion more than 2500-ml transfusion over 24 hours.
- b- Warming of the blood decrease the incidence of cardiac arrest.
- c- If diffuse bleeding occurs platelet and coagulation screening should be done.
- d- The physiologic sequences of citrate toxicity are very significant.
- e- The increased potassium content of the stored blood does not provide clinical severe oligurea.

20) Which of the following retroperitoneal hematomas should not be explored:
- a- A large expanding peritoneal hematoma.
- b- A large non-expanding pelvic hematoma..
- c- A small centrally located non-expanding hematoma superior to the pelvis.
- d- A large non-expanding hematoma over the head and body of the pancreas.
- e- A small non-expanding hematoma over the body of the pancreas with intact pancreatic capsule.

21) Local environmental factor that may permit wound infection include all of the following EXCEPT:
- a- Leaving devitalized tissue in the wound.
- b- Fluid collection and edema in the wound and around it.
- c- Peripheral vascular disease.
- d- Hypoxia produced by shock or anemia.
- e- Keeping the suspicious wounds open for repeated wound toweling.

4) Regarding chronic wounds all the following are true E XCEPT:
- a- Are the wounds that fail to heal because of underlying pathologic condition?
- b- Best treated by excision and graft.
- c- Basic biologic mechanism of healing is contraction.
- d- usually minimal epithelisation is required for healing
- e- One of the most costly unsolved problems is health care.

5) Concerning fat embolism all are true EXCEPT:
- a- Respiratory insufficiency occurs in 75% of patients.
- b- Hypoxemia precedes the development of dyspnea and tachypnea.
- c- Chest radiographs findings are usually absent in the early phases.
- d- Neurologic involvement usually develops in the absence of pulmonary abnormality.
- e- Most commonly follows orthopaedic injuries.

6) The most common cause of pulmonary edema in surgical patients is:
- a- Atrial fibrillation.
- b- Overload of infused fluids.
- c- Pulmonary hypertension.
- d- Inadequate analgesia.
- e- Hypertension.

7) All are true concerning deltoid muscle EXCEPT:
- a- Principal abductor of humerus.
- b- Arises in part from the lateral third of the clavicle.
- c- Innervated by the axillary nerve.

d- Works synergistically with biceps brachia.
e- Inserts into the lateral surface of the humerus.

8) One of the following is true, concerning the innervation of the lumbrical muscle:
a- All are innervated by ulnar nerve.
b- Two lateral lumbricals by ulnar two medial by median.
c- Two medial lumbricals by ulnar two lateral by radial.
d- Two lateral lumbricals by median two medial by radial.
e- Two medial lumbricals by ulnar, two lateral by median.

9) All of the following muscles arise from the calcaneum EXCEPT :
a- Flexor digitorum brevis.
b- Extensor digitorum brevis.
c- Quadratus plantae.
d- Flexor hallucis brevis.
e- Abductor hallucis.

10) The following statements are correct EXCEPT :
a- The ant. Sup. Iliac spine is the origin of the sartorius muscle.
b- The adductor longus arises from the front of the body of pubis.
c- The gluteus maximus muscle arises anterior to the posterior gloteal line.
d- The cremasteric muscle inserted to the pubic tubercle.
e- Pubic crest gives origin to rectus abdominis and pyramidalis muscles.

11) The following statements are correct EXCEPT:
a- Total paralysis of the adductor magnus with injury of the obturator nerve.
b- The 4th layer of the foot contains the plantar and the dorsal interossei.
c- The action of articularis genu muscle is to prevent the synovium from being insinuated between the patellar and femur.
d- The five genicular arteries are branches of the popliteal artery.
e- The peroneus tertius is contained in the anterior compartment of the leg.

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16) Plain radiographs of which of the following soft tissue sarcoma is most likely to show peripheral mineralization?

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e- Gany Tany Nany M1 stage IVG.B

19) Staging malignant bone tumours according to Enneking classification, the following is true EXCEPT:
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c- G1 T1 M0 is stage IIA.
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e- G2 G2 T2 M1 is stage IIIA.

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a- Diffuse osteopenia near the fracture site.
b- Loss of a distinct fracture line.
c- Dence trabeculae near the fracture line.
d- Restoration of cortical continuity.
e- Abundant callus with calcifications.

21) The most important nutritional supplement required in a critically ill patient is :
a- Fat.
b- Carbohydrate.
c- Protein.
d- Iron.
e- Calcium.

22) A Bennett's fracture is difficult to maintain in a reduced position mainly because of the pull of the :
a- Flexor pollicies longus.
b- Flexor pollicis brevis
c- Extensor pollicis brevis.
d- Abductor pollicis longus.
e- Opponeus pollicis.

23) A fracture in children that often requires open reduction is:

a- Femoral condyle.
b- Humeral lateral epicondyle.
c- Distal tibial epiphyses separation.
d- Both bones of forearm.
j- Subtrochantric fracture of femur.

24) All are true about fractures of the proximal humerus EXCEPT:

a- Eighty percent of proximal humeral fractures are impacted and relatively non-displaced.
b- Two part lesser tuberosity fractures are usually associated with posterior dislocations.
c- Displaced or unstable two and three part fractures are those with greater than 45 ^{0} of angulation or a displacement of the humeral head.
d- Open reduction and internal fixation is the procedure of choice for two and three a part fractures.
e- Four parts fracture is best managed using tension band & with minimal surgical disruption of soft tissue to the humeral head to minimize A.V.N of the head.

25) All are true about scapular fracture EXCEPT :
a- The most common fracture type is the body of the scapula.
b- Rib fractures being the most common associated injuries.
c- Fractures of the spine of the scapula can cause rotator cuff dysfunction.
d- There is no rule for surgical management of fractures of the scapular.
e- Scapular fractures are often diagnosed incidentally.

26) Regarding the radiological criteria for surgical treatment of the tibial plateau fractures, all are true EXCEPT:
a- Condylar widening of more than 5 mm.
b- Lateral condylar fracture with step of more then 3mm.
c- Laterally tilted of bicondylar fracture more than five degrees..
d- Is not indicated if medial plateau tilting is less than five degrees.
e- Is not indicated in non-displaced axial bicondylar fracture.

27) Concerning compartment syndrome of the foot, all are true EXCEPT:
a- It associates crush injuries of the foot.
b- Nine compartments are recognized in the foot.
c- Release of the compartments is recommended when the intra compartmental pressure exceeds 30 mm Hg.
d- Delay in releasing the compartments result in slouphing of the skin dorsally.
e- Two dorsal and one medial incisions, is the most predictable way to decompress the foot.

28) Complications of non surgical treatment of calcaneal fractures include all the followings EXCEPT:
a- Subtalar arthrosis.
b- Peroneal tendon em-pingment.
c- Hind foot varus.
d- Widening of hind foot.
e- compartmentent syndrome of the foot.

29) Concerning fractures of the head of femur, all are true EXCEPT:
a- Closed treatment is accepted in Pepkins I fracture if anatomic reduction lachieved.
b- Traction or non weight bearing for 4-6 weeks is mandatory after open fixation.
c- A higher incidence of association is noticed with anterior hip dislocation than with posterior dislocation.
d- 70% of the articular surface of the femoral head is sharing in the weight bearing of the body.
e- Loose osteochondral segment are excised despite its size.

30) Concerning the tests for knee ligament injury all of the folowing are correct EXCEPT
a- Lachman test for ACL injuries.
b- Posterior drawer test at 90 ^{0} for PCL tear.
c- Anterior drawer test at 90 ^{0} is not specific for ACL tear.
d- Valgus laxity at 0 degree for MCL.
e- Posterior lateral drawer at 30 ^{0} for postero lateral corner injury.

31) Regarding PCL rupture , all true EXCEPT:
- a- Isolated PCL rupture usually presented with instability.
- b- Isolated PCL rupture usually presented with pain.
- c- Non surgical treatment is an option.
- d- OA of patello femoral and medial compartment occur in PCL deficient knees.
- e- Postero lateral corner injury is common association with PCL tear.

32) In external fixation for fracture pelvis all are true EXCEPT:
- a- Fast and effective method of early stabilization.
- b- Reestablish pelvic ring and pelvic volume
- c- Decreases blood loss in pelvic fractures.
- d- Best used for patients with floating iliac wings.
- e- External fixation does not provide rigid stability for posterior structures of the pelvis.

33) In angiography for pelvic bleeding all are true EXCEPT:
- a- small percentage of patients with pelvic fractures will benefit from angiography and immobilization
- b- The majority of blood loss is arterial
- c- Prior to angiography other sources of bleeding should be ruled out
- d- Stabilization of the fracture in haemodynamic unstable patients should be done prior to angiography
- e- The majority of blood loss is venous.

34) Concerning Hangman's fracture of C2 in children all are true EXCPT:
- a- It is a traumatic spondylolisthesis of C2
- b- Neurologic deficits are very common
- c- Most fractures can be seen on lateral and oblique cervical X-ray
- d- Treatment include reduction and immobilization in Minerva cast for 8 weeks
- e- Surgery is indicated only for delayed union or an unstable non union.

35) In spinal cord injury all are true EXCEPT:
- a- Central cord injury is most common type of cord injury
- b- Patients with central cord syndrome usually have motor weakness or paralysis in upper and lower extremities
- c- Functional recovery is poor
- d- In anterior cord syndrome there is preservation of vibration and position sense.
- e- Central cord syndrome occurs primarily in the cervical region.

36) In Burst fracture of the spine all are true EXCEPT:
- a-Are the result of axial loads applied to the spine
- b- Most common in lower lumbar spine@
- c-Anterior and middle columns are always involved
- d- It can be stable or unstable
- e-Neurological deficit may occur.

37) The mechanism of seat belt injury is:
- a- Flexion.
- b- Axial compression.
- c- Flexion distraction.
- d- Extension.
- e- Flexion rotation.

38) Dupuytren's contracture of the hand is due to shortening or contracture with one of the following:
- a- The long flexor tendons.
- b- The palmar lumbrical muscles.
- c- The palmar interossci.
- d- The palmar aponeurosus.

e- The skin of the palmar of the hand.

39) In complete chronic rupture of the rotator cuff, one of the following is TRUE:
- a- Pain is usually maximal in the arc of 60-120 ^{0} of shoulder elevation.
- b- CT scan is the best model to confirm diagnosis.
- c- There is significant history of injury.
- d- Pain rather than loss of function is the main indication for operative repair.
- e- Routine radiographs of the shoulder are invariable normal.

40) All are true concerning a swan neck deformity of the finger EXCEPT:
- a- Hyperextension of the metacarpophalangeal joint, flexion of the proximal interphalangeal joint and extension of the distal interphalangeal joint.
- b- Flexion of the metacarpophalangeal joint, hyperextension of the proximal interphalangeal joint and flexion of the distal interphalangeal joint.
- c- Frequently associated with rheumatoid arthritis.
- d- Treatable in-patients with rheumatoid arthritis.
- e- May be seen in normal individuals.

41) About villonodular synovitis , are true EXCEPT:
- a- Shoulder joint is the most common involved.
- b- The patient complains from intermittent pain and effusion.
- c- Microscopic appearance is similar to giant cell tumour of tendon.
- d- Treatment is by synovectomy.
- e- Radiotherapy may by justified if surgery failed.

42) Regarding paget's disease of bone , all true EXCEPT:
- a- Characterised by high rate of bone resorption and formation.
- b- Malignant changes occurs in polystotic form.
- c- It may lead to high out put cardiac failure.
- d- Difficult to internally fix due to bone sclerosis.
- e- Fracture is common in weight bearing bone.

43) Regarding osteopetrosis , all are true EXCEPT :
- a- The bones are dense and structures.
- b- Osteopetrosis tarda inhereted as dominant.
- c- Osteopetrosis congenita inhereted as recessive.
- d- Osteopetrosis congenita is the commonest form.
- e- Surgery is very different due to bone density.

44) Regarding T.H.R , one is false:
- a- The stem of the femoral component breaks in the area of maximum tensile stress.
- b- A valgus position of the femoral component more than 140 degrees decreases the movement of bending.
- c- The ratio of the length of the lever arm of the body weight to that of the abductor musculature is about (4-5)
- d- In straight leg raising the load on the head of femur is 3 times the body weight.
- e- A varus position of the femoral component decreases the axial loading on the stem.

45) Regarding hallux vlagus, one is false:
- a- Footwear has role in the etiology of the disease.
- b- The valgus posture of the great toes frequently causes a hammer second toe.
- c- Conservative treatment should be first tried.
- d- Osteoarthrosis frequently develops at the first Meta tarsophalangeal joint.
- e- Dome osteotomy of the base of the first metatarsal is the recommended to patient between 12-17 years.

46) The indications for cessation of brace treatment in scoliosis are the following EXCEPT:
- a- The attainment of an adequate age for fusion if the curve is still progressing.
- b- Failure of the curve to respond to bracing.

c- Skin problems making bracing impossible.
d- Incomplience of the patient and family.
e- Progressive curve of 20 degrees in a growing.

47) Characteristic features of neurofibromatosis include all of the following, EXCEPT:
a- Café-au-lait spots.
b- Spinal and skeletal deformaties.
c- Lisch nodules of the iris.
d- Acoustic neurofibromatosis.
e- Nystagmus.

48) Early postoperative spinal complications, include all of the following EXCEPT:
a- Haematoma.
b- Paresis.
c- Paralytic ileus.
d- Acute disciitis.
e- Deep venous thrombosis.

49) Causes of poor results of operative treatment in disc disease, include all of the following EXCEPT:
a- Poor patient selection
b- Arachnoiditis
c- Exact segment and level exploration during sugery.
d- Presence of an extradural or intrathecal tumour.
e- Iatogenic complication, (i.e. neural tissue mishandling).

50) Marfan's syndrome is characterized by all EXCEPT:
a- Tendency to tall stature.
b- Increased homocystine in the urine.
c- Lens subluxation.
d- Scoliosis.
e- Family history suggesting autosomal dominant inheritance.

51) Cervical traction is best performed in sitting position, with the neck in :
a- Neutral position.
b- Extension position.
c- Flexion position.
d- Rotated position.
e- Lateral bending position.

52) A 3 months old girls feet turn in examination shows bilateral metatarsus adductus that is passively correctable. Recommended treatment should consist of:
a- Reverse last shoes.
b- Observation.
c- A denis browne splint.
d- Serial casting.
e- Abductor hallucis release followed by serial casting.

53) A 5 year old boy sustained an incomplete fracture of the proximal tibia which managed by along leg cast for 6 weeks. Three months after injury, which of the following complications is most likely?
a- Premature proximal tibial physical closure.
b- Valgus deformity.
c- Significant over growth of the tibia.
d- Knee joint stiffness.
e- Varus deformity.

54) The recommended treatment for a 10 year old boy, who has flexible, painless flat foot with slight valgus feels and normal subtalar motion is :
a- No treatment.
b- A foot orthotic.

c- Subtalar arthrodesis.
d- Talo navicular fusion.
e- Calcaneal osteotomy.

55) A 14 year old boy with a chronic severe slip of the upper femoral epiphysis, recommened treatment is :
a- Skeletal traction followed by pinning.
b- Manipulative reduction and pinning.
c- Extra capsular proximal femoral osteotomy.
d- Pinning in situ.
e- Cuneiform femoral neck osteotomy

56) A 13 year old girl has pain over the first M.T.P. joints and difficult wearing shoes. X-ray showed a 14 degrees of the inter-metatarsal angle and 30 degrees of the metatarsophalangeal angle. The most important compouned of surgical management is :
a- Capsular repair of the first M.T.P. joint.
b- Removal of the medial prominence.
c- First metatarsal osteotomy.
d- Proximal phalangeal osteotomy.
e- Lateral capsular release.

57) The x-ray of a 12 year old premenstrual girl , showed a Rt thoracic scoliosis with 19 degrees curve between T6-T12. After 6 months the curve increased to 29 degrees. Recommended treatment should be :
a- Repeat x-ray in 6 months.
b- Thoracic isometric exercises.
c- Electrical stimulation.
d- Use of a throacolubosacral orthosis.
e- Posterior spinal instrumentation without orthodesis.

58) In addition to age, what other factor best predicts curve progression on adolescent idiopathic scoliosis?
a- Vertebral rotation.
b- Curve magnitude.
c- Family history.
d- Pulmonary function.
e- Thoracic kyphosis.

59) The factor most important for quality of life in adults with cerebral palsy is :
a- Mobility.
b- Education and communication.
c- Activities of daily living.
d- Ambulation.
e- Accessible buildings.

60) A 3 year old boy presents with a congenital scoliosis resulting from hemivertebra recommended management should be :
a- Observation.
b- Total contact thoraco/lumbosacral arthosis .
c- Anterior/posterior convex heiepiphpysiodesis.
d- Posterior spinal fusion.
e- Hemivertebra excision.

61) Which joint is most often affected in juvenile rheumatoid arthritis?
a- Distal interphalangeal.
b- Facets.
c- Ankle.
d- Hip.
e- Knee.

62) During a surgical correction of radial club hand, excessive bleeding is noted. This complication is caused by :
   a- Prothrombin dificiency.
   b- Hemophilia.
   c- Disscminated intravascular coagulopathy.
   d- Thrombocytopenia.
   e- Increased antithrombin III.

63) The evaluation of an infant with congenital muscular torticollis must include:
   a- Renal ultrasonography.
   b- Assessment of hip instability.
   c- Audiometry.
   d- MRI of cervical spinal cord.
   e- Echocardiography.

64) A 4 year old girl with L5 myelomeningocle had developed a calcaneal deformity of the left foot. Muscle examination reveals grade 5 dorsoflexors, grade 3 evertor, and grade 0 plantar flexors and invertors. The recommended treatment is :
   a- A split anterior tibial tendon transfer to the cuboid and transfer of both the peroneus longus and breivis to the Os calcis.
   b- An anterior tibial tendon transfer to the second cuneiform.
   c- Transfer of the anterior tibial tendon through the interosseous membrane to the calcis.
   d- Transfer of both the peroneus longus duel brevis to the os calcis.
   e- Transfer of the A chilles tendon tot he distal fibula.

65) Limb lengthening by the Ilizarove technique is characterized by :
   a- Lengthening through a physis (chondodiastasis) .
   b- mid diaphyseal corticotomy.
   c- Bone grafting of the distraction gap.
   d- Infrequent problems or complications.
   e- Distraction of the callus.

66) A 5 year old girl with a right thoracic scoliosis has an increase in curvature from 15-40 degrees in a 3 months period. Physical examination is otherwise normal. The most appropriate diagnostic study is :
   a- MRI of the spinal cord.
   b- Pulmonary function studies.
   c- Muscle enzyme studies.
   d- Lateral flexion extension radiographs of the cervical spine.
   e- Electromyography with nerve conduction studies.

67) Regarding TEV , all are true EXCEPT :
   a- The talus deviated medially and plantar ward.
   b- The navicular rotates medially.
   c- The metatarsals are often deformed.
   d- There is often external tibial torsion.
   e- There is postero medial soft tissue contraction.

68) Regarding osteogenesis imperfecta , all are true EXCEPT:
   a- May be inhereted as autosomal dominant.
   b- May be inhereted as autosomal recessive.
   c- May be due to spontaneous mutation.
   d- Incidence around 1:5000 life births.
   e- It is due to failure of maturation of collagen beyond reticulin fiber stage.

69) The least sensitive tumour to radiotherapy is :

   a- Ewing sarcoma of bone.

   b- Soft tissue sarcomas.

c- Chondrosarcomas

d- Ostescarcoma.

e- Malignant melanomas.@

70) Concerning vincristine, all are true EXCEPT :
- a- Can be given by intravenous or intramuscular routes.@
- b- Its action is cell cycle phase specific.
- c- Can cause acute nausea and vomiting.
- d- Can cause perpheral neuropathy.
- e- Can cause alopecia.

71) All of the following benign lesions in bone can change to malignancy EXCEPT ONE:
- a- Pagets disease.
- b- Fibroma.@
- c- Chondroma.
- d- Lipoma.
- e- Osteochondroma.

72) All are true regarding unicameral bone cyst EXCEPT:
- a- Develop in metaphyseal bone adjacent to the physes.
- b- Commonly involve the proximal humerus.
- c- Usually eccentric.@
- d- Pathologi c fractures frequently occur.
- e- A disease of the growing skeleton.

73) In giant cell tumor all are true EXCEPT :
- a- An aggressive benign neoplasm.
- b- Involve the metaphysis and epiphysis of a long bone.
- c- No recurrence of the tumor after curettage and cementation.@
- d- Pulmonary metastasis develop in 2% of patients.
- e- The most common site are around the knee and elbow.

74) All are true about ostoid osteoma EXCEPT :
- a- Causes aching pain that often is relieved by non steroidal anti-inflammatory agents.
- b- Occurs in young adults.
- c- Never resolve spontaneously. @
- d- Has a characteristic radiologic appearance of a small lytic nidus surrounded by dense reactive tissue.
- e- Twice as perclant in males as in females.

75) Concerning osteogenic sarcoma all are true EXCEPT :
- a- The most common primary bone tumor.
- b- The most common form is the high grade intramedullary variant.
- c- Paraosteal osteosarcomas are high grade tumors.@
- d- Metastases commonly involve the lungs.
- e- A pathologic fracture through the tumour may be the presenting condition.

76) Regarding Ewing's sarcoma all are true EXCEPT:
- a-Are closely related to primitive neuroectodermal tumors.
- b-They share a classic chromosomal translocation between chromosome 11and 22.
- c-5% of tumor involve the pelvis.@
- d-The prognosis is improved with a more distal lesions.
- e-The tumour is radiosensitive.

77) Concerning chondrosarcoma all are true EXCEPT:
- a- most chondrosarcomas are high grade tumors.@
- b- the prognosis is worse in axial and proximal appendicular skeleton involvement.
- c- the histologic grade correlates with metastases and important determinant of survival.

d- 25% of chondrosarcomas occur in the pelvis.
e- The tumour almost never encountered in a child.

78) Concerning fibrous dysplasia all are true EXCEPT:
a- Usually affect diaphysis and epiphysis of long bones
b- May affect ribs
c- May cause coxa vara
d- Cutaneous pigmentation never present in fibrous dysplasia@
e- The disorder is not hereditary.

79) All of the following variables are directly proportional to the stability of the ilizarov system EXCEPT:
a- Number of the rings.
b- Length of connection between the rings.@
c- Diameter of the wires.
d- Crossing angle of the wires.
e- Surface area of the contact between bone ends.

80) All of the following complications are considered technical faults and to poor designation of the ilizarov apparatus EXCEPT:
a- Persistant pain.
b- Joint stiffness.
c- Pin tract infection.@
d- Refracturing after frame removal.
e- Tenodesis.

81) Concerning the dis-advantage of using excision and bone transport by ilizarov system for chronic osteomyelitis of the tibia One is TRUE :
a- Longer hospital stay.
b- Increase the need for soft tissue flaps.
c- The quality of bone is poor and week, late consolidation.
d- Control of infection is less successful.
e- Difficult to apply in case if infected bone segment is very near to the joints.@

82) The monolateral external fixators has advantages over ilizarov system in traumatology, all are true EXCEPT:
a- Easier and rapid to apply.
b- More comfort to the patient.
c- Less complications.@
d- Shorten surgery time.
e- It's indications and use are more frequent than the indications for ilizarov system

83) Amyloid formation is associated with which of the following disease:
a- Lymphoma.
b- Ewing's tumour.
c- Hodgkin's disease.
d- Multiple myeloma. @
e- Reticulum cell sarcoma.

84) A one & a half year old male presented with hip joint septic arthritis, his empirical antibiotic treatment should cover :
a- E-coli.
b- Pneumococci.
c- Mixed infection.
d- Salmonella and staph aureus.
e- Hemophilus influenza and staph aureus.@

85) Invading organism in hematogenous septic arthritis starts at which of the following tissues :
a- Capsule.
b- Soft tissue.
c- Articular cartilage.

d- Synovial membrane.@
e- Metaphysis of adjacent long bone.

86) What is the most likely sequelle to healing in tuberculosis arthritis and in tuberculosis of the spine ?
a- Fibrosis.
b- Calcification.
c- Bony ankylosis.@
d- Restroation of function.
e- Increase in antibody formation.

87) The drug of choice in treating a bone infection caused by coccidiomycosis is :
a- Penicillin.
b- Gentamycin.
c- Griseofulvin.
d- Amphotericin B.@
e- Chlortetracycline.

88) Basic principles of infected non union management are the following EXCEPT:
a- Control of infection.
b- Establish bone continuity.
c- Correct leg length discrepancy.@
d- Immobilization.
e- Achieve skin cover.

89) Elevated rim acetabular components are currently available for use with both cemented and uncemented acetabular reconstructions, which of the following is a consequence of using these cups?
a- Decreased dislocation rates.
b- Increased range of movement.
c- Increased rate of dissociation of the polyethylene component on acetabular component.
d- Increased impingment rates of femoral component on acetabular component.@
e- Increased polyethylene wear against the metal backing.

90) Which technique improves the compressive modulus of cement ?
a- Use of low viscosity cement.
b- Finger packing of cement.
c- Insertion of a vent tube.
d- Addition of antibiotics to cement.
e- Reduction of cement porosity.@

91) The followings are common osteochondroses EXCEPT:
a- Osgood-Schlutter disease.
b- Blount disease.
c- Scheurmann's disease.
d- Gaucher's disease.@
e- Kienbock's disease

92) The followings are causes of aquired flat-foot EXCEPT:
a- Fractures of calcaneum.
b- Lisfranc coalition.
c- Tarsal coalition.@
d- Poliomyelitis.
e- Trauma to the muscles of the leg.

93) Tolocalcaneal coalition are most clearly identified by :
a- AP & lat. & oblique x-rays.
b- AP & lat. Tomography.
c- Arthrography of subtalar joint.
d- C.T scan of the hindfoot.@
e- Bone scan.

94) The highest risk of carpal tunnel in different occupational groups is :
   a- Grinders.@
   b- Teachers.
   c- Doctors.
   d- Pianests.
   e- Black smith.

95) The lowest in vitro wear rate for a material used for joints is:
   a- Ceramic.@
   b- Silastic.
   c- Methyl methacrylate.
   d- 316 stainless steel.
   e- High density polyethylene.

96) The stucture which appear grey in T2 MRI is :
   a- Bone marrow.
   b- Cortical bone.
   c- Ligament.
   d- Articular cartilage.@
   e- Menisici.

97) Regarding cemented acetabular components in THA the following is true EXCEPT:
   a- The metal backed more evenly distrubute forces throughout the cement mantle than all polyethylene cups.
   b- Mechanism of failure of cemented acetabular components is primarily biologic event rather than mechanical event.
   c- Autopsy studies demonstrated that cemented components fail primarily at the cement bone interface.
   d- Bone resorption begins at the dome of acetabulum and progresses circumferentially toward the outer edge of the component.@
   e- Heavy weight, young age, postraumatic arthritis and osteonecrosis are patient related factors that increase failure rates.

98) Cementless fixation implants were developed in hope of eliminating periprosthetic bone resorption (cement disease) but the use of cementless componenets did not eliminate the problem of periprosthetic bone resorption or osteolysis in cementless fixation, the following are true EXCEPT:
   a- Both axial and rotational stability are important to obtain.
   b- Porous coated acetabular components reduced polyethylene wear.@
   c- Currently most porous coated acetabular components are implanted with a "press fit" technique.
   d- The implant must be rigidly by initially if bone ingrowth is to occur.
   e- Results of threaded acetabular components have been disappointing.

99) Non arthroplasty considerations in knee reconstruction, the following is true EXCEPT:
   a- The role of arthroscopic debridement in the treatment of the arthritic knee remains controversial.
   b- Upper tibial osteotomy is preferred to prosthetic replacement in young active over weight patients.
   c- Adequate motion, flexion greater than 90 degrees and flexion contracture less than 15 degrees and a competent medial collateral ligament are pre-requisities for U.T.O.
   d- Limited range of movement improves with U.T.O.@
   e- Good results following synovectomy have been reported in rheumatoid arthritis, pigmented villonodular synovitis and synovial chondromatosis.

100) Regarding unicompartmental and total knee arthroplasty the following is true EXCEPT:
   a- Unicompartmental replacement should not be performed if the ACL is not in good condition.

b- Revision TKA after unicompartmental is challenging due to significant bone loss and need for allograft augmentation.
c- Active infection, severe neurologic compromise, prior knee arthrodesis and extensor mechanism disruption are contraindications to TKA.
d- Severe recurvatum deformity of the knee is not a contra indication to TKA.@
e- Rheumatoid arthritis patients are among patients at risk for less favourable outcome of TKA.

THE KEY Year 4 + 5

1) D
2) B
3) E
4) B
5) D
6) B
7) D
8) E
9) D
10) C
11) A
12) C
13) A
14) D
15) E
16) B
17) C
18) B
19) E
20) D
21) C
22) D
23) B
24) E
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35) B
36) B
37) C
38) D
39) D
40) A
41) A
42) A
43) D
44) C
45) E
46) E
47) E
48) D
49) C
50) B
51) C
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68) D
69) E
70) A
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72) C
73) C
74) C
75) C
76) C
77) A
78) D
79) B
80) C
81) E
82) C
83) D
84) E
85) D
86) C
87) D
88) C
89) D
90) E
91) D
92) C
93) D
94) A
95) A
96) D
97) D
98) B
99) D
100) D

Paediatric Orthopaedics

1. The following disorders are common causes of limping in achild ages 4-10 years except

   a. transient synovitis.
   b. Legg-Calve-Perthes disease.
   c. Slipped capital femoral epiphsis. @
   d. Discoid meniscus.
   e. Limb-length discrepancy.

2. In evaluating a patient with a rotational deformity, begin by assessing the rotational profile which includes all the following except

   a. Hip rotation.
   b. Pelvis radiographs (AP and Von Rosen View). @
   c. Thigh-foot angle.
   d. Foot – progression angle.
   e. Axis of the foot.

3. Septic arthritis and acute hematogenous osteomyelitis often occur together except in

   a. the proximal femur and hip joint.
   b. The neonates.
   c. The proximal humerus and shoulder joint.
   d. The proximal radius and elbow joint.
   e. The distal medial tibia and ankle joint. @

4. Aggressive management is recommended for all patients with sickle –cell disease in whom osteomyelitis is suspected. Management should include all of the following except.

   a. usage of tourniquets to prevent dissemination and to have a bloodless field. @
   b. Careful preoperative transfusions and intravenous hydration.
   c. Prompt decompression of all abscesses.
   d. Collection of culture material prior to initiation of antibiotics.
   e. Parenteral antibiotics for 6-8 weeks.

5. Arthrogryposis is a complex syndrome, all the following about this syndrome are true except

   a. multiple joint contractures.
   b. The surgical treatment of arthrogryposis clubfoot is rarely successful. @
   c. The earliest orthopedic treatment is the treatment of birth fractures.
   d. Sensation is intact.
   e. The classic form of arthrogryposis is referred to as amyoplasia.

6. Slipped capital femoral epiphysis is a disorder which occurs in adolescence and manifest itself by all of the following except

   a. The pain is localized to the anterior hip, groin or medial thigh and knee.
   b. In stable slip there is independent fluoroscopic movement of the epiphysis with respect to the neck.
   c. Callus formation at the periphery of the physis is a radiographic sign of chronicity.
   d. Typically the patient is an obese child who walks with antalgic gait with the leg in internal rotation. @

e. The severity of the slip correlates with the amount of obligatory external rotation during passive hip flexion.

7. The following findings have been shown to correlate with long-term progression of Legg-Calve_Perthes disease except

a. lateral epiphyseal calcification.
b. 9 years old girl with loss of hip motion.
c. Gage's sign which is medial epiphyseal metaphyseal triangular lucency. @
d. Horizontal appearance of the growth plate.
e. Metaphyseal cysts.

8. The following have long been considered as risk factors for developmental dysplasia of the hips except

a. Breech position.
b. Congenital muscular torticollis.
c. Metatarsus adductus.
d. Congenital recurvatum/dislocation of the knee.
e. Multipara gravida. @

9. Concerning the principles of treatment of children with developmental dysplasia/dislocation of the hip, all the following are true except

a. closed reduction is the preferred method of treatment in children up to 24 months of age.
b. Open reduction is indicated whenever a concentric reduction cannot be obtained and at any age.
c. Femoral shortening reduces tension across the hip.
d. Pavlik harness cannot be used in dislocated hips that are not reducible. @
e. The dramatic remodeling of the acetabulum is within the first 6-12 months after reduction of the hip.

10. In treating the anterolaterally bowed prepseudoarthrotic tibia , all the following are considered except

a. bracing.
b. Onlay bone graft.
c. Osteotomy to correct the tibial deformity. @
d. Free fibular graft.
e. Below-knee amputation.

11. In order to assess and predict the limb length discrepancy and choose the correct treatment plan, all the following are considered except

a. using blocks under the short leg until the pelvis is level.
b. Examine for fixed pelvic obliquity , hip and knee contractures.
c. The scanogram which includes all osseous structures.
d. The Moseley and the Green-Anderson methods take into account the foot height. @
e. The orthorentgenogram shows each joint of the extremity.

12. During adolescence, the knee is a common site of complaints. The following are identifiable sources of anterior knee pain except

a. Osteochondritis dissecans.
b. Saphenous nerve entrapment.
c. Reflex sympathetic dystrophy.
d. Slipped capital femoral epiphysis.
e. Larsen syndrome. @

13. The severity of club foot (TEV) is characterized by the presence of all the following except

a. calf atrophy.
b. Curved lateral border.
c. Cavus.
d. Fixed equinus.
e. Anterior displacement of the fibula. @

14. A 6-month –old infant born with idiopathic TEV was treated by serial casting since shortly after birth. The AP and forced dorsiflexion lateral views showed parallelism of the talus and calcaneus and break of the midfoot, the treatment should include

a. Continued serial casting.
b. Straight cast.
c. Elective complete surgical release. @
d. Ankle foot orthosis.
e. Surgical hindfoot release.

15. The following should take place in the surgical management of club foot

a. the plantar fascia and tight intrinsic muscles are divided.
b. Z-plasty lengthening of the tendo Achilles and tibialis posterior.
c. The tight capsules are divided.
d. The navicular and the cuboid are released.
e. The extent of the release depends on the deformity. @

16. All the following are prerequisites for hip arthrodesis in management of paralytic polio hip dislocation except

a. Good surrounding musculature.
b. Strong contralateral knee. @
c. Free from contractures.
d. Above the age of 10 years.
e. Stable foot and ankle.

1.The following occupations reneqin with high incrdeuce ofeancer except out?

a. Coal for workers
b. Nickel workers
c. Asbestos workers
d. Dyeindustries
e. Tobacco industries @

1.The following are carcino geuic except out ?

a. 3.4 Benzpyrene
b. Ultra violet radiation
c. House duSt @
d. Soot
e. Moulds

1. Begirding ionizing radiation (out is false)?

a. Decreases ANA sYntheses
b. Fncrease H2O2 in the tissues
c. Breaks disulphide binds @
d. Causes atrophy of the semin ferous tubules of the tests
e. Causes pathological fractures

2.The following pathological charge canoccurin metabolic bone disease (out is false ?

a. Osteoporosis
b. Localized area of skeletal involvement @
c. Octeomalacia
d. Ostoeopetrosis
e. Osteitis fabrics cystic

2. Osteoporosis differs from ostematocia in that (out is correct)?
a. The rodioraphic density of the skeleton is reduced in the later
b. The remaining boue in the former presents a normal histological appearance. @
c. Major changes occur in the epiphysis in the former
d. Pseudo forctures are commoner in the former than the later
e. Excess osteiod tissueis present in the former.

3. Excessive osteoid tissns is formed in the following exceptoue?
a. Vit. D deficiency
b. Osteomalacia
c. Patient receiving ants. Convalsantdrugs
d. Patient on long term anticoagnlant therapy @
e. Long standing obstructive jaundice

4. The destruction of bone is assocrated with the following biochemical changes?
a- An increase secretion of hybroxy proline in the urine
b- An elevated AL Kaline phosphatase
c- An elevated acid phosphatease @
d- An elevated senam calcium
e- Depression of the sercem phosphate

5. Concerning uitamine .D (out is incorrect)?
a- Increases the intestinal absorption of calcium
b- Is essential for normal calcification of the proliferating cartillage
c- Is inactive before it is hydoxytated in the kindney
d- May be formed in the body
e- It is formed in the skin the action of sun light on the 1.25 (OH)2 D3 @

6. In histological and physiological study of skeletal muscule shows that (one is incorrect) ?
a. Sarcomere length shortens as the muscule shortens
b. The width of the anisotropic (A) band reuixins constant during muscule contraction
c. Teusion developed is maximal when the actin and myosin molecules just fail to over lap @
d. The stimulus necessary to cause local contraction is minimal when applied at the –2- line.
e. The width of the A band is the length of the myosin molecule

7. Impulses seizing pain sensation in the left foot are relayed (one is incorrect) ?
a. They cross to the rught spinothalamic tract
b. In the same spinal cord tract which serves heat sensation
c. To the thalansuson the right side
d. Pain enters consciousness at subcor tical level in the thalamus
e. In the right internal capsule to the precentral gyrus @

8. Aretlex action (one is incorrect)?

a. May be carried out by skeletal smooth and cardiac muscule and by glands
b. Is influenced by higher canteresin the brain
c. Results from activity in at least two centrol nevons synapses in series @
d. May in volve simul tone ous contraction of same skeletal muscules and relaxation of others
e. In the knee jerk there is reciprocal inloition phenomena

9. With reference to potassium in the body (one is incorrect) ?
   a. The equivalent of most of theadily dietary in take of potassium is secrated into the tubular fluid in the kidneys
   b. An increace in extracelluar potassium concentration endangers cardiac function
   c. Adecrease in extra cellular potassium concentration endangerscardiac faction
   d. An increase in extra cellular potassium coneutration (e. g to 8 m mol/l) relaxes vascular smooth muscules
   e. An increase in aldosteroue secretion results in an increase in extracllular potassium concentration @
10. Malignant disease may complicate the following chronic inflammatory diseases except out?
   a. Chronic osteowelitis
   b. Sarcoidosis @
   c. Asbestosis
   d. Schistoso miasis
   e. Ulceration colitis
11. Acutein flamation can becorsed by the following except out?
   a. Streptococcus pneumonia
   b. Mycobacterium ivbecylosis
   c. Neisseria meningitides
   d. Mycobacterium leprae @
   e. Borrelia Vincent
12. Metoplasia the Trans formation of one folly differentiated tissue in to another occurs in the following except out ?
   a. Connection tissue elements
   b. The gastrointestinal tract
   c. The central nervous system @
   d. The biliary system
   e. The our thelium
13. Ischaeuri necrosis is a recognized complication of fractures of the following except one?
   a. Talus
   b. Os . calcis @
   c. Scaphoid
   d. Nxvicalon
   e. Femoral head
14. The locating of a closed fracture may be associaxced with the following pathological consequences except one?

a. Myosites ossificaut
b. Pasevdarthrosis
c. Non- union
d. Osteosarcoma @
e. Renal calculi

15. Collagen, the ultimate source of the strength of a wound one is incorrect?
a. Is formed by undifferentiated maseuchymal cells @
b. Is chariged with the postage of the time
c. Undergoes lysis wellas synthesis ever when the total collagen content of the wound is remaining constant
d. Is broken down by the enzyme collegians
e. Is normally embedded in gromd substance

16. Primary union of a wound is is asso ciated with the following exceptions?
a. Alagphase
b. A demolition phase
c. A contractile phase @
d. A proliferation phase
e. A maturation phase

16. Wound handling is enhanced by the following except one?
a. A balanced diet
b. Zinc
c. Cortical @
d. Oxygen
e. Vit. C

17. Concerning the ABO blood group (one is incorrect)?
a. A person of group O is auniversal recipient @
b. A person of group B usually has ant A agglutinins in his plasma
c. In an incompatible blood trans fusion reaction donor cells are lysed by recipient antibodies
d. A sever trans fusion reaction is likely to be followed by jaundice
e. antibodies to the A and B agglu finogens are complete cold antibodies

18. following moderate blood (O) (e. g 500ml (one is incorrect)?
a. The arlerial blood pressure may benormal
b. Skin vessecls are constricted
c. Lymph flow from peripheral tissues is diminished
d. the maintenance of brain blood flow is mediated be cerebral vasoc constrain @
e. there is nothing happening which could increase exracelluar osmolality

19. active transport xcross cell membrane (one is incorrect) ?
a. is increased by hypothermia @
b. transfers hydrogen lons intogdstric juice against a concern traction gradient
c. requires energy production by the cell
d. aids hydrogen on secretion by kindneg tubule cells
e. prevents an excess of water from entering the cell

20. immediately after complete division of a mixed periphery nerve (one is correct)?

a. The denervated muscule exhibit the character is tic features of an upper motor neuron lesion
b. There is loss of sensation in the denevled area of skin @
c. The denezbable asea of skin will be cooler than surrounding area
d. the sweat gland in the Denervated skin will respond to an increasein temperature in the hypo the lamus
e. the cut nerve fibres of the ceutral stump are capzble of reg eneration a long the nerve sheet

21. Wound handling is enhanced by the following except one?
a. A balanced diet
b. Zinc
c. Cortical @
d. Oxygen
e. Vit. C

22. with respect to calcium in man (one is incorrect) ?
a. there is a higher concentration of free colcium lone inside cells than outside @
b. bound calcium in the plasma dissociates more when ph decreases
c. low plasma calcium concentration leads to the release of more 1.25-DHCC
d. phytic acidin the diet diminishes a bsorption of calcium from the gut
e. the usual intake for ar adalt is nearer 1000mg/ day

23. with reference to calamine (one is incorrect)?
a. Calcition calcium level within a few minutes
b. Calcium enters smooth museule cell when they contract
c. Calcium is messary for blood clotting
d. parathormone decreases calcium absorption from the gnt @
e. calcium Lon concentration in interstitial fluid is about 1.2 mmol/l

24. the following are indication for open reduction in displaced fracture acetabullum except?
a. To obtain suitable alignment
b. For early mobilization of the extent
c. Close reduction and traction generally do not aclieive sefis factroy alig nent
d. it is indicated in osteoporofic ladies @
e. it is notIndcated in renal failure

25. the following radiogrophs are necessary to complete the evaluation of an unstable pelvic fracture except one ?
a. AP in let and out let views
b. CI- scanning
c. MRI
d. obligee Radiographs
e. Bone isotope scan @

26. Which of the following moda lities is contra indica ted in os good shlatter disease?
a. Rest
b. Immobilization
c. Iso metric knee exeacues
d. Knee pods
e. Slezoid in jectior @

27. the following intropeazatine principles and techniques will maximize the interference tit achieved bone cement except one?

a. Cemeut wixing should be uniformly
b. Should be allowed to a doughly state before componeut are inserted
c. Surgical field should as dry as possible
d. Don + use cement restrictors in the funereal canal @
e. Afew millimeters thick is considered the optimum

28. Alow serum calcium may be associated with
a. Hyper excitability of reuoheral nerves
b. Reduced colcitonin release
c. Decrease serum phosphate concentration @
d. Vitamin D- defficiency
e. Reduced parathormone release

29. In bone in the mafare person (one is incorrect)
a. Three quarters of the substarrce is minerol one- quarter organic
b. Bed rest can deplete the mineral content
c. Osteoblasts are associated with areas where resorption is taking place @
d. Alkaline phssphatause is associoled with the laying down of minerol
e. Calcition moves calium out from the lasma and interstitial fuids

30. Inclinicol practice the following are cavse of T.H.R dis/ ocation exceptoue
a. Previous surgery
b. Soft tissue reconstruction's
c. Pofirut coripliance
d. Surgical aproach
e. Large head size @

31. Injecfion of paraflyrid hormone teads to (one is incorrect)?
a. Increase in yrinary phosphate
b. Increased producyion of dihydro- xycholesalciferol in the kindney
c. An increase in the number of psleoblsts @
d. A rise in plasma calcium
e. In creased reabsorption of colcium in the kidney

32. With reference to waters in the body
a. The total accounts for approximatly 60% after bode weight in alean adult wan
b. Approx mately two thirds of the total volceme is intro- cellular
c. The total violence may be estimated using rodro actinely labelled olasvua albumin @
d. There is inevitably a continuos loss of water vix the skinner averse tewsluratune condctiorns
e. Ingestion of an unuscially large guanyitig of water results in atransieut decrease in plasmq osmolarify

33. Attiman somatic lower mofo- novena in the spinal cord (one is incorrect)?
a. Usually innervates only one muscule fiber@
b. Lies on the same side of the body as the muscule which it innervates
c. Lies on the same side of the body as spindle releptors which caves its monosynaptic activation
d. Has synopses on itscell body
e. Has synapses on its dendrites

34. An hour after an uncomplicated tronsection of the spinal cord at the level of C8 in an asulf human of the following one the correct?

a. An ipslatezol extensor plan far response (babinski positive)
b. Ipselatzal spastically below the level of the lesion
c. Loss of fewperofure sense in the ipselateialleg @
d. Loss of position seuse in the ipselateial
e. Loss of crudftouch sense is the ipsefateal

35. Concerning the tnee- jerk reflex in anormald adult tuman one icarght (one of the following is correct)
a. The rethexresponse time is about lmsec
b. The reflex response time is about the same as the subasect's reaction time
c. The reflex is monosynaptic @
d. The associated inibition of moto- neornes supplying antagonisto muscules is monosynaptic
e. The amplitude of the reflex lonfracyion cannot be voluntarily influenced by the subject

36. Concerning neuromuscular transmission in man)one is wroug callase correct except)?
a. Calcium entry into the presynaptic tesminal is anessential step in the release of transmilter following an action potential in the motor newe
b. Succing choline cavses adepola rization of the postsynaptic membrane
c. Blokale of transmission by curare is by competitiue in tibition of the receptors on the postsynoptic membrane
d. The blokade of transmission by carare can be antagonized by on anticlines terase
e. Spontaneous release of reusmitter occurs in the presence of xction potential in the motor nerve

37. Conczning steletal musaule in an a dult human (one is right)?
a. The force of contraction is directly proportional to the rote of shorening
b. Each fiber is supplied by branches of several motor nerve fibres
c. In vivo the maximum shortening is about 30%
d. When afibre shortens its diameter decreases @
e. When afibre shorteus the length of the I band decreases

38. The normal level of ionized calciume in by the plasma is mantained by the following ryedhansins
a. The secretion of calicitionin
b. The presence of 1.25(oH)2 D3
c. Parathgriod hormone secretion
d. Renal tobular conservation
e. The circulating level of magnesium @

39. Regording surfars wear and hand size of the pristhesis (one is wroua)
a. The coffictenf of sliding friction when polythelene moves against the polised metal surface is approximately 0.1m to 0.2 m
b. The actuxl were is proportional to the foxd and silidingdistance
c. Larger head size lces greater sliding distance
d. Larger lead size produce greater quaint of wear particles
e. Swatter lead size leas less incidence of dislocation @

40. Concerning TKR in fixed volgus knees the following are correct except one?

a. Ieiotibiol band should be released at 10ɕm proximal totle joint
b. Release popliteas idndon
c. Release fibuar follotazl ligauseut
d. Excise head bfibulat @
e. Relase the lateral leead of gastrocnemius

SPINE

1. All the following factors are important in functional recovery after nerve injury except

    a. type of nerve injured.
    b. Length of the injury zone.
    c. the timing of nerve repair.
    d. Status of the target organ. @
    e. The technical excellence of the surgeon.

2. One of the following statements is correct
    a. A nerve is a complex structure made up of individual nerve fibers, blood vessels, and supporting connective tissue that surround the fascicles. @
    b. Perineurium is a connective tissue that separate the nerve fibers.
    c. Endoneurium is a connective tissue that surround the fascicles.
    d. Epineurium is a connective tissue that cover the muscle fibre.
    e. Golgi tendon organs are located in the muscular belly and doesn't respond to muscle contraction.

3. The objective of nerve conduction studies and EMG is to demonstrate the following except

    a. muscle denervation – to differentiate between a complete lesion and a reversible nerve conduction block.
    b. reinnervation - as a proof of regeneration.
    c. Diffuse or localized disturbances of nerve conduction in peripheral nerves.
    d. Disturbance of neurotransmission at the motor end plate.
    e. Is not useful to follow reinnervation following peripheral nerve injury. @

4. The following are basic steps of nerve repair except
    a. preparation of the stumps with separation of individual fascicles or groups of fascicles.
    b. approximation of the stump.
    c. Suturing under tension. @
    d. Coaptation of the nerve stumps.
    e. Maintenance of the coaptation.

5. The following are extrinsic risk factors for thromboembolism except
    a. increased blood viscosity .
    b. paralysis.
    c. Immobility.
    d. Lower extremity or pelvis involvement.
    e. Upper extremity injury. @??????

6. The following pharmacologic agents are antagonists to warfarin anticoagulation except.
    a. cholestyramine .
    b. griseofulvin.
    c. Cimetidine. @

d. Rifampin.
e. Vitamin K.

7. All the following statements are NOT true concerning the functional spinal unit (FSU) except
   a. It is composed of one vertebra.
   b. It moves with four degrees of freedom (2 translation and 2 rotation)
   c. Load and torques applied to the FCU only along the axial axes.
   d. It is a unit of coupling behavior of translation and rotation about several axes. @????
   e. Motor segment cannot be divided to elements or columns.
8. In the weightbearing (loaded) condition and with the ankle in the neutral , which structures contribute most to assisting inversion of the ankle ?
   a. anterior talofibular ligament.
   b. Tibial and talar articular surfaces. @????/
   c. Calcaneofibular ligament .
   d. Anterior talofibular and calcaneofibular ligaments.
   e. Distal tibiofibular syndesmosis.
9. anabolic – androgenic steroids used in the presence of high –intensity exercise and proper diet promote what effect?
   a. decreased muscle protein synthesis .
   b. decreased body weight .
   c. decreased muscle strength.
   d. Increased body weight. @
   e. Increased aerobic power.
10. The primary function of the meniscus is
    a. stability of the knee.
    b. Facilitate motion.
    c. Protect the ligaments from injury .
    d. Distribute load on the tibial plateau. @
    e. Prevent synovial impingement.
11. The lubrication of the articular surface depends on the following except
    a. porosity of the tissue.
    b. Loading conditions at the articular surface.
    c. The rate of loading and sliding speed.
    d. Increased viscosity of the lubricant. @????
    e. Intrinsic stiffness and permeability of the cartilage.

12. The following hormones affect the function of the skeletal muscle except

a. insulin.

b. Growth hormone.

c. Testosterone.

d. Anabolic steroids.

e. Lipase. @

13. Contraindications to intravenous regional anaesthesia include the following except

a. severe hypertension.

b. Peripheral vascular disease .

c. Infection.

d. Surgery lasting more than 2 hours.

e. Colles' fracture. @

14. Clinical application for distraction osteogenesis include all except

a. limb lengthening.

b. Hypertrophic nonunion.

c. Deformity correction.

d. Correction of intraarticular pathology. @

e. Segmental bone loss.

15. One of the following is correct concerning osteoporosis

a. it is not an age related pathology.

b. Cancellous and trabecular bone is not affected.

c. Plain x-rays are usually not helpful unless bone loss is more than 30%. @

d. Spinal cord injury patients bone loss starts very late from skull to lower limbs.

e. Chronic alcoholism is not a cause for osteoporosis.

16. The position of arthrodesis of the knee is

a. 0-7 ° of valgus 10-15° of flexion. @

b. 0° valgus 20° flexion.

c. 20° valgus 15° flexion.

d. 10° valgus 20° flexion.

e. 5° varus 15° extension.

17. The following statements about congenital scoliosis are true except

a. prognosis depends on the type and its location in the spine.

b. Single hemivertebrae may produce a progressive spinal deformity.

c. Hemivertebra is a failure of segmentation. @

d. Unilateral unsegmented bars are a frequent congenital cause of progressive spinal deformity.

e. Surgical treatment of a congenital spinal deformity depends on its severity and the patient's age.

18. In scoliosis , one statement is correct

a. bracing is the primary treatment for patients with infantile and juvenile idiopathic scoliosis. @

b. the onset of juvenile scoliosis is between birth and 3 years of age.

c. There is no difference in the prevalence berween males and females.

d. Pulmonary symptoms and vital capacity in scoliotic patients doesn't correlate with degree of thoracic curves.

e. Scoliosis occurs in 50% of children with a parent who had adolescent idiopathic scoliosis.

19. In neurofibromatosis all are true except

a. dyastrophic neurofibromatosis curves do not resond to any form of bracing.

b. Indications of nondyastrophic curves for treatment are the same as the idiopathic scoliosis.

c. It is not common in gymnasts and athletes whose activity requires repetitive flexion / extension.

d. PET scan (positron emission computed tomography scanning) may be helpful in identifying the defects.

e. Treatment is basically aimed for symptomatic relief rather than fracture healing.

23. Following statements are correct concerning spondylolisthesis except

a. it is a forward slippage of one vertebra on another.

b. Treatment depends on symptoms and the degree of the slip.

c. Slip angle is a useful measure to quantify the lumbopelvic deformity.

d. Intractable pain and neurologic compromise is not an indication for surgical treatment. @

e. Severe slip grade can be associated with radicular findings of L5.

24. In ankylosing spondylitis patients the following are true except

a. HLA B27 is positive in all the patients. @

b. The patients are usually young men in the third and fourth decade of life.

c. Bamboo spine can be demonstrated on radiographs at the end stage of the disease.

d. Flexion deformity of both hip joints and severe kyphosis might occur.

e. Sacroiliac joint obliteration and marginal syndesmophytes allow radiographic differentiation fron DISH.

25. In spinal stenosis all true except

a. spinal stenosis is the most common cause of neurologic leg pain in old population.

b. The usual pathology is involvement of the three –joint complex undergoing significant degenerative changes.

c. Rest , isometric abdominal exercises , NSAID's and weight reduction are important in management of patients with spinal stenosis.

d. In achondroplasia , there is no spinal canal stenosis. @

e. Adequate decompression includes laminectomy and partial medial facetectomy can be helpful in spinal stenosis without destabilizing the spine.

26. The following symptoms are related to neurologic claudication except

a. Pain is provoked by walking variable distance.

b. Leg pain is relieved by standing. @

c. Relief is obtained by positional change.

d. Van Gelderan bicycle test is negative.

e. Painis reduced by sitting.

TRAUMA

1. Concerning failed back syndrome , all are true except

a. poor patient selection.

b. Recurrent herniation at another level.

c. Infection.

d. Vertebral stability. @

e. Unrecognized lateral stenosis.

2. The most common site for vertebral column injury is

a. cervical thoracic spine.

b. Thoracolumbar spine. @

c. Lumbosacral spine.

d. Sacrococcygeal spine.

e. Thoracic spine.

3. spinal cord ends at

a. T12-L1.

b. L1-L2. @

c. L2-L3.

d. T11-T12.

e. L3-L4.

4. Posterior column system of Denis is composed of the following except

a. posterior long. Ligament. @???/

b. pedicles.

c. Spinous process.

d. Intarspinous ligaments.

e. Supraspinous ligaments.

5. One of the following statements concerning thoracic and lumbar fractures is INCORRECT

a. In the presence of thoracic kyphosis, an axial compression load will result in anterior flexion load to the vertebral body.

b. Flexion forces cause anterior compression and posterior tension of the spinal segment.

c. Fracture dislocations indicate unstable injury.

d. Wedging more than 10% of its anterior height of the vertebral body is considered unstable injury. @

e. Pure ligamentous injuries of the spine are at risk for late instability.

6. The differential diagnosis of all osteoporotic compression fractures include the following except

a. Tumours of the spine.

b. Infection of the spine .

c. Metabolic disease.

d. Metastatic disease.

e. Dysmenorrhea. @

7. Which one of the following vertebtae doesn't have transverse process ??????????

   a. Axis C1.

   b. Atlas C2.

   c. C3.

   d. C4.

   e. C5.

8. Which root is compressed between L4-L5 vertebrae?

   a. L4.

   b. L5. @

   c. S1.

   d. S2.

   e. L3.

9. Which ligament tends to prevent hyperextension of the vertebral column?

   a. PLL (post. Long. Lig.)

   b. ALL (Ant. Long. Lig.) @

   c. Interspinous ligament.

   d. Ligamentum flavum.

   e. Supraspinous ligament.

10. The reflex voiding center is locted in the spinal cord at the level.

   a. S1-S3. cord segments

   b. S2-S4. cord segments @

   c. L3-S2. cord segments

   d. L2- S1 cord segments

   e. S4-S5 cord segments.

CLINICAL ORTHOPAEDICS

1. Mallet finger is produced by

   a. Ulnar nerve palsy.

b. Cut flexor digitorum sublimis.
c. Cut flexor digitorum profundus.
d. Cut extensor tendon of finger. @
e. Cut of extensor pollicic longus.

2. The condition " stress fracture" may most closely simulate

a. An ununited fracture.
b. A fresh fracture.
c. An osteomyelitis.
d. A malignant tumour. @
e. A benign tumour.

3. Concerning Kienbock's disease of the wrist all are false except

a. Most frequently occurs in children.
b. Is usually bilateral.
c. May result in degenerative arthritis of the wrist. @
d. Is a disorder without clinical significance.
e. Is caused by an inborn error of metabolism.

4. Concerning coxa vara all are true except

a. May be a complication of intertrochanteric fractures.
b. May be congenital in origin.
c. Increases the power of the abductors of the hip. @
d. Will result in leg length inequality when unilateral.
e. It is a deformity in which the neck-shaft angle of the proximal femur is decreased.

5. Concerning congenital pseudoarthrosis of the tibia all are false except

a. It is usually bilateral.
b. Can be invariably successfully treated by a cancellous bone graft.
c. Presents with anterolateral bowing of the tibia. @
d. The commonest site is at the junction between upper and middle third.
e. It is a very common disorder.

6. Regarding pigmented villo-nodular synovitis one is true

a. Occurs only in synovial joints.
b. Is more common in males.
c. Contains large amounts of haemosiderin. @
d. Can be excised without fear of local recurrence.
e. Is much commoner in haemophiliacs compared to the normal population.

7. Plantar fascitis may be associated with all the following except

a. Morton's metatarsalgia. @
b. Reiter's syndrome.
c. Gout.
d. Rheumatoid arthritis.
e. Ankylosing spondylitis.

8. What structure is most important in preventing anterior dislocation of the shoulder?
a. Glenoid labrum.
b. Subscapularis tendon.
c. Middle glenohumeral ligament.
d. Superior glenohumeral ligament.
e. Inferior glenohumeral ligament. @

9. What position in Pavlik harness can result in osteonecrosis?
a. Excessive flexion.

b. Excessive external rotation.
c. Excessive abduction. @
d. Chest straps too high.
e. Chest straps too low.

10. The most common consequence of an untreated compartment syndrome is one of the following
a. Clawing of the foot. @
b. Sensory loss on the plantar aspect of the foot.
c. Sensory loss of the dorsum of the foot.
d. Equines deformity.
e. Varus deformity.

11. The therapeutic rationale for early (within 24 hours) stabilization of femoral shaft fractures in multiple trauma patients is to decrease one of the following
a. Pulmonary complications. @
b. Rate of nonunion.
c. Incidence of infection.
d. Required analgesics.
e. Rate of transfusion.

12. When treating a chronic posterior compartment syndrome of the leg which muscle should be decompressed?
a. Peroneus longus.
b. Soleus.
c. Flexor hallucis longus.
d. Peroneus brevis.
e. Tibialis posterior. @

13. Which of the following is the most common complication of upper tibial osteotomy for osteoarthritis of the knee?
a. Neurologic injury.
b. Inadequate angular correction. @
c. Osteonecrosis of proximal fragment.
d. Nonunion.
e. Infection.

14. The most important factor in predicting healing of a repaired meniscal tear is
a. Type of suture.
b. Timing of repair.
c. Location of tear. @
d. Stability of the joint.
e. Length of immobilization.

15. Which of the following symptoms is typically unique to vascular claudication?
a. Leg pain when descending stairs.
b. Leg pain when walking a consistent distance. @/????
c. Leg pain and low back pain with activity.
d. Leg pain when standing.
e. Relief of pain with postural change.

16. Avascular necrosis of the head of the femur is associated with all the following except
a. Gaucher's disease.
b. Fracture neck of femur.
c. Steroid therapy.
d. Diabetes. @
e. Caisson's disease.

17. All may cause shoulder pain except
a. A torn rotator cuff.

b. Acute cholecystitis.
c. Cervical spondylosis.
d. Collapse of the 10th thoracic vertebra. @
e. Diaphragmatic pleurisy.

18. All are true regarding frozen shoulder syndrome except
a. Males and females are equally affected.
b. Frequently all movements of shoulder are decreased.
c. There is usually a prodromal febrile illness. @
d. It is usually a self-limiting disorder.
e. Radiological examination is normal.

19. Regarding trigger finger all are true except
a. the finger becomes fixed in flexion and requires excessive manual reduction.
b. associated with rheumatoid arthritis.
c. associated with palpable nodule on the extensor tendon. @
d. Occurs in children and adults.
e. treated by division of the proximal part of the fibrous sheath.

20. Neurofibromatosis (Von Recklinghausen's disease) may present with all of the following except
a. leg length inequality.
b. Pseudoarthrosis of the tibia.
c. A rigid scoliosis.
d. Soft tissue tumours.
e. Dislocated hips. @

21. Regarding tendon transfer for irreparable radial nerve palsy, all are true except
a. The extensor digitorum communis tendons are exposed from proximal radial to distal ulnar direction.
b. The patient with high radial nerve palsy loses the ability to extend the wrist, finger and thumb.
c. The transferred tendons should be tunneled through subcutaneous fat.
d. In palmaris longus absence the pronator teres transferred to extensor pollicis longus. @
e. Tendon transfer of flexor carpi ulnaris to extensor digitorum communis.

22. All are true regarding osteoid osteoma except
a. consists of an area of dense cortical bone thickening with a central lucent area.
b. Classically produces pain relieved by aspirin
c. Occasionally becomes malignant. @
d. May show up on a technetium-99m bone scan when not obvious on routine radiographs.
e. Is treated by excision of the cortical thickening and the nidus.

23. All of the following muscles are supplied by the ulnar nerve except
a. Abductor digiti minimi.
b. Abductor pollicis brevis. @
c. The 1st dorsal interosseous muscle. Abductor pollicis.
d. Opponens digiti minimi.

24. Regarding calcification in the tendinous rotator cuff all are true except
a. seen in the subacromial region on an antero-posterior radiograph of the shoulder.
b. frequently associated with a significant shoulder injury. @
c. Can be an incidental finding.
d. Can present as acute pain with restriction of movements in the shoulder.
e. The pain is due to the calcific deposit which causes an acute inflammatory reaction.

HAND

1. Concerning congenital sublaxation of the wrist (Madelung's deformity) all are true except
   a. It consists of dorsal and lateral bowing of the distal radius.
   b. The deformity is more common in females.
   c. It is associated with premature fusion of the ulnar half of the distal radial epiphysis.
   d. It is treated by shortening of the distal end of the ulna.
   e. It is usually unilateral. @
2. The carpal tunnel syndrome may be associated with all the following except
   a. diabetes.
   b. Rheumatoid arthritis.
   c. Syringomyelia. @
   d. Acromegaly.
   e. Myxoedema.
3. All are correct regarding Kienböck's disease except
   a. it is a lunatomalacia with the characteristics of wrist pain.
   b. The pathological changes in the lunate are believed to be due avascular necrosis.
   c. The Y pattern of intraosseous blood supply of the lunate is the most common.
   d. Grip strength is diminished.
   e. The lunate at risk refers to the lunate that is associated with a long ulna. @
4. All are correct concerning rheumatoid arthritis except
   a. rheumatoid factor (RF) is an IgM autoantibody.
   b. Metacarpophalangeal and proximal interphalangeal joints are characteristically involved.
   c. Flexor pollicis longus is the most common flexor tendon to rupture.
   d. The boutonniere deformity may be present in RA.
   e. Bouchard's nodes refer to enlargement of the distal interphalangeal joints. @
5. One is not correct concerning Dupuytren's contracture
   a. mode of inheritance is autosomal dominant.
   b. Strongly associated with HIV infection.
   c. The ring and small fingers are most commonly involved.
   d. An aggressive and severe form begins at an early age .
   e. Women are more frequently affected. @

ORTHOPAEDICS L.L

1. The Mangled Extremity Severity Score (MESS) can help to decide whether amputation or salvage should be performed in a type III C open fractures. The following are factors considered in the (MESS) except
   a. the type of energy.
   b. The blood pressure of the patient.
   c. The circulation status .
   d. The age group.
   e. The proximity of the injury. @
2. Low dose warfarin given to a patient with deep vein Thrombosis acts principally to
   a. bind to antithrombin III
   b. binds to factors Xa and thrombin factors.
   c. interfere with the metabolism of factors II,VII, XI, and X. @
   d. reduce endothelial damage.
   e. reduce patelet aggregation.
3. What property of methylmethacrylate debris is the Most significant factor leading to bone resorption?
   a. type of cement .
   b. prostaglandin E2 concentration .
   c. cement particle size. @

d. presence of antibiotics in the cement.
e. cement viscosity.

4. Which of the following best describes the relationship of the tibia to the femur during a positive reverse pivot-shift test?
   a. Tibia reduced with knee flexion and subluxates posteriorly on knee extension.
   b. tibia reduced with flexion and sublaxates anteriorly in extension.
   c. tibia sublaxated posteriorly with flexion and reduces in extension. @
   d. tibia reduced in flexion and fibula sublaxates posteriorly in extension.
   e. tibia sublaxated anteriorly with flexion and reduces in extension.
5. The type of gait pattern that characterizes the patient with ACL – deficient knee is
   a. prolonged stance phase on the involved leg.
   b. Prolonged swing phase on the involved leg.
   c. Normal biphasic flexion-extension moment.
   d. Hamstring avoidance gait.
   e. Quadriceps avoidance gait.@
6. When is total knee arthroplasty a contraindication in a hemophilic patient?
   a. with factor levels above 90%.
   b. In the presence of an inhibitor. @
   c. In an ankylosed knee.
   d. In the presence of flexion contracture greater than 10 degrees.
   e. In the presence of a positive HIV test.
7. For an all-polyethylene tibial component , the adequate thickness (in mm) of the polyethylene needed to minimize wear is
   a. 3
   b. 5
   c. 8 @
   d. 11
   e. 13
8. Following total knee arthroplasty , the tendency for patellar dislocation is most commonly associated with which of the following conditions
   a. internal rotation of the tibial component. @
   b. external rotation of the tibial component.
   c. External rotation of the femoral component.
   d. Medial translation of the patellar component.
   e. Medial translation of the femoral component.
9. During exposure of the posterolateral knee corner, the structure that is encountered between the popliteus tendon and fibular collateral ligament is
   a. peroneal nerve .
   b. iliotibial band.
   c. Biceps tendon.
   d. Oblique popliteal ligament.
   e. Inferior geniculate artery. @

10. When balancing soft tissue on a total knee replacement
What is the most appropriate next step when the knee is correctly balanced on flexion but loose in extension?
    a. Augment the distal portion of the femoral component. @
    b . augment the posterior condyles of the femoral component.
    c. advance the tibial tubercle.
    d. insert a bone graft on the proximal tibial surface.
    e. Insert a thicker tibial component.
11. When performing fasciotomy of the leg for compartment syndrome, release of the fascia of the lateral compartment will decompress which of the following neurovascular structures?
    a. anterior tibial artery and deep peroneal nerve.
    b. Deep peroneal nerve.
    c. Superficial peroneal nerve. @
    d. Peroneal artery.
    e. Perforating peroneal artery.
12. During a posterior approach to the hip joint, profuse bleeding is encountered during incision of the quadratus femoris. The bleeding is most likely from which artery?
    a. superior gluteal.
    b. Inferior gluteal .
    c. Lateral frmoral circumflex.
    d. Medial femoral circumflex. @
    e. Posterior femoral circumflex.
13. What is the major cause of failure of a cemented total hip arthroplasty after 15-20 years?
    a. wear of the bearing surface. @
    b. femoral loosening.
    c. Acetabular loosening.
    d. Bone stock loss.
    e. Stem breakage.
14. During a revision total hip replacement, a retractor Is placed beneath the rectus tendon. The retractor slips many times and is replaced over the top of the rectus tendon. The structure in immediate proximity to the retractor that is most likely to be damaged is
    a. profunda femoris artery.
    b. Femoral nerve. @
    c. Femoral vein.
    d. Femoral artery.
    e. Lateral femoral cutaneous nerve.
15. The most common long-term complication of cemented total hip arthroplasty in patients under 50 years of age is
    a. infection.
    b. Dislocation.
    c. Periprosthetic femur fracture.
    d. Acetabular component loosening. @
    e. Femoral stem fracture.

16. Why is a cobalt-chrome alloy preferred over a titanium alloy for a cemented femoral component in a total hip arthroplasty?
    a. less stiffness.
    b. Less particulate metal debris. @
    c. Elastic modulus closer to bone cement.
    d. Cost-effectiveness.
    e. Better cement bonding ability.
17. Which of the following surgical approaches in primary total hip arthroplasty is associated with the highest incidence of hip dislocation?
    a. anterior .
    b. anterolateral.
    c. Posterior. @
    d. Transtrochanteric.
    e. Lateral.
18. The most common postoperative complication associated with adolescent hallux valgus is
    a. arthrofibrosis.
    b. Osteonecrosis.
    c. Infection.
    d. Loss of fixation.
    e. Deformity recurrence. @
19. A symptomatic patient with positive electrodiagnostic tests is about to undergo decompression of the posterior tibial nerve and the plantar branches. The muscle that must be mobilized or divided to trace the plantar nerves is
    a. abductor hallucis. @
    b. adductor hallucis.
    c. Flexor hallucis brevis.
    d. Flexor digitorum brevis.
    e. Flexor accessorius.
20. A 30 year-old female has plantar lateral pain of the fifth metatarsal head associated with a plantar callus. The x-ray shows a wide 4-5 intermetatarsal base angle. Nonsurgical treatment failed, surgical treatment should consist of
    a. excision of the 5th metatarsal head.
    b. Excision of the lateral capsule and capsulorraphy.
    c. Long oblique osteotomy of the 5th metatarsal shaft. @
    d. Osteotomy at the base of the 5th metatarsal.
    e. Fifth toe amputation.
21. The ligament that acts as the primary restraint to inversion and anterior talar translation at 15 degrees of ankle plantar flexion is
    a. posterior talofibular .
    b. anterior talofibular . @
    c. calcaneofibular.
    d. Deltoid.
    e. Anterior syndesmosis.
22. The common cause of synovitis of the second metatarsophalangeal joint is attritional changes on

the volar plate related to what factor?

a. pressure from a valgus great toe.
b. A long second metatarsal. @
c. Rheumatoid arthritis.
d. Traumatic dislocation.
e. Hammering of the second toe proximal interphalangeal joint.

23 What the single strongest deforming force leading to subluxation and dislocation of the second metatarsophalangeal joint?

a. flexor digitorum longus.
b. The dorsal interosseous muscle.
c. Lumbrical muscles.
d. Extensor digitorum brevis.

Extensor digitorum longus. @??????

1. Regarding the cubital fossa all true except
   a. It is triangular area between pronator teres, brachioradialis and a line joining humeral epicondyles.
   b. It is triangular area between pronator teres, flexor digitorum superficialis and a line joining humeral epicondyles. @
   c. Median nerve passes through the fossa medial to brachial artery.
   d. Radial nerve and posterior interosseous nerve pass through the fossa.
   e. Biceps tendon passes through it lateral to brachial artery.
2. Regarding radial nerve all true except
   a. It is the direct continuation of the posterior cord.
   b. It gives nerve supply to brachioradialis from the main trunk.
   c. Posterior interosseous supplies the supinator muscle.
   d. Posterior interosseous supplies the anconeus.@
   e. The main trunk supplies part of brachialis.
3. Regarding the piriformis muscle all true excpt
   a. It is a key to the arrangement of structures of gluteal region.
   b. Its insertion is to greater trochanter.
   c. Sciatic nerve passes over it.@
   d. Inferior gluteal nerve and vessels pass below it.
   e. Superior gluteal nerve and vessels pass over it
4. Regarding inversion and eversion of the foot all true except
   a. Tibialis anterior and posterior are responsible for inversion.
   b. Peroneus longus , brevis and tertius are responsible for eversion.
   c. Eversion and inversion occur mainly at the mid-tarsal joint.@
   d. Eversion and inversion occur mainly at the subtalar joint.
   e. Flexor and extensor hallucis assist in inversion.
5. Regarding the carpal flexor tunnel all true except
   a. the flexor digitorum tendons pass through it.
   b. The median nerve passes through it lateral to flexor superficialis.
   c. The profundus tendon passes deep to the superficial tendon.
   d. Palmaris longus passes through the tunnel medial to the flexor superficialis.@
   e. Ulnar nerve and vessels pass over the tunnel.

6) All the following muscles are involved in abduction of the arm to 180 ° EXCEPT:

a- Supraspinatus.
b- Deltoid.
c- Subscapularis.
d- Tarpizius.

e- Latissimus dorsi@

7)Concerning the anatomical snuffbox , all are true Except :

a- It is bounded by the tendor of extensor pollicis longus posteriorly.
b- It is bounded by the tendous of abductor pollicis longus and extensor pollicis brevis anteriorly.
c- Its floor consists of the styloid process of the radius, scaphoid bone, the trapezium and bone of 1st MCB.
d- It is crossed by the basalic vein.@
e- It contains the radial artery.

8) The adductor canal contains all of the following structures EXCEPT :

a- Femoral nerve.@
b- Femoral artery.
c- Femoral vein.
d- Saphenous nerve.
e- Nerves to the vastus medialis.

9)All of the following muscles contributes directly to the stability of the knee joint EXCEPT :

a- Semi membranous.
b- Sartorius.
c- Biceps femoris.
d- Gastro enemius.
e- Soleus.@

10)All of the following boundaries of the femoral ring EXCEPT :

a- Femoral vein.
b- Lacunar ligament.
c- Femoral artery.@
d- Superior ramus of pubis.
e- Inguinal ligaments.

11.The following muscles are formed the floor of the femoral triangle EXCEPT :

a- Pectineus.
b- Adductor longus.
c- Iliacus.
d- Psoas.
e- Adductor brevis.@

12.All of the following muscles arise from the calcaneum EXCEPT :

a- Flexor digitorum brevis.
b- Extensor digitorum brevis.
c- Quadratus plantae.
d- Flexor hallucis brevis.@
e- Abductor hallucis.

13.All the following are causes of hypercalcemia except

a. Sarcoidosis.
b. Immobilization.
c. Destructive bone lesions.
d. Magnesium deficiency. @
e. Addison's disease.

14.Regarding tests of bleeding disease all true except

a. PTT is the test for intrinsic system and common pathway.
b. Prothrombin time is the test for both extrinsic and common pathway. @
c. Bleeding time is increased in failure of vascular contracture.
d. Bleeding time is increased due to inadequate platelet activity.
e. If both PTT and PT are normal the defect is in the vessel wall or platelets.

15.Regarding calcitonin all are true except

a. It reduces bone resorption.
b. The effects of calcitonin are more marked on older than young animals.@
c. It is secreted by parafollicular or C cells.
d. Calcitonin has been used in the treatment of hypercalcemia.
e. In medullary carcinoma there is excess calcitonin secretion.

16.Regarding parathyroid hormone all are true except

a. Increases phosphate excretion.
b. Decreases plasma phosphate level.
c. Stimulates the action of osteoblasts. @
d. Increases calcium excretion.
e. Increases synthesis of 1,25 dihydroxycholecalciferol.

17.Regarding vitamin D all are true except

a. Natural vitamin D is produced in the skin by ultraviolet radiation.

b. main action of vitamin D is to aid reabsorption of calcium from the kidney. @

c. in physiological levels vitamin D has no direct effect on bone.

d. in pharmacological dose it exhibits parathyroid hormone like action.

e. vitamin D is more important than parathyroid hormone in calcium homeostasis.

18. Regarding heterotopic calcification all are true except

a. Heterotopic calcification is calcium salt deposition in tissues other than osteoid.

b. Metastatic calcification occurs in dead tissue. @
c. Dystrophic calcification occurs in degenerative tissue.
d. Dystrophic calcification occurs in dead tissue.
e. Metastatic calcification occurs in apparently normal tissue.

19. Regarding embolism all are true except

a. It can be due to parasite.
b. It can be due to tumour.
c. It can be due to foreign body.
d. Systemic embolism usually arises from calf veins. @
e. Paradoxical embolism is usually associated with pulmonary hypertension.

20. All the following are cells of connective tissue except

a. mast cells.
b. plasma cells.
c. red blood cells.@

d. pericytes.

e. eosinophil granulocytes.

21. Regarding amyloidosis all true except

a. any organ may be involved.
b. Death usually due to liver involvement.@
c. Secondary amyloidosis is the commonest.
d. Diagnosis is usually by biopsy from gongiva.
e. Amyloid contains component of immunoglobulin and other components.

22.All the following are complication of wound healing except

a. keloid formation.
b. Cicatrisation.
c. Wound dehiscence.
d. Neoplasia.
e. Wound contracture. @

23. Regarding compartment syndrome all are true except

a. Absolute value > 30 mmHg.
b. Derived value > 30mmHg. @
c. Pulses rarely absent.
d. Muscle contusion is an aetiological factor.
e. Hypoxia secondary to arterial or venous occlusion is an aetiological factor.

24.Regarding reflex sympathetic dystrophy all are true except

a. Pain more than expected for the degree of injury.
b. There is intolerance to cold.
c. Sympathetic blockade relieves the pain. @
d. Drugs used include antidepressants and anticonvulsants.
e. Physical therapy is an important part of treatment.

25. Regarding hospital infection all are true except

a. organisms derived from external sources it is called cross infection.
b. If the organisms derived from the patient himself it is called autoinfection.
c. Wound infection increases with the duration of operation.
d. Incidence of hospital infection has no relation with the size of the wound. @
e. Wound infection increases in the presence of drainage tube.

26. Regarding total body irradiation all are true except

a. It is grouped according to the dosage.
b. It is grouped according to the systemic manifestations.
c. Cerebral syndrome usually leads to death.
d. Patients never recover from gastrointestinal syndrome. @
e. Haematological phase usually due to lower dosage.

27. Regarding clostridial infection all are true except

a. gram negative bacilli. @
b. spore forming organism.

c. toxic organism and produces exotoxins.
d. They are obligatory anaerobes.
e. The organisms are resistant to heat.

28.All the following factors are important in functional recovery after nerve injury except

a. type of nerve injured.
b. Length of the injury zone.
c. the timing of nerve repair.
d. Status of the target organ. @
e. The technical excellence of the surgeon.

29.One of the following statements is correct

a. A nerve is a complex structure made up of individual nerve fibers, blood vessels, and supporting connective tissue.@
b. Perineurium is a connective tissue that separate the nerve fibers.
c. Endoneurium is a connective tissue that surround the fascicles.
d. Epineurium is a connective tissue that cover the muscle fibre.
e. Golgi tendon organs are located in the muscular belly and doesn't respond to muscle contraction.

30.The objective of nerve conduction studies and EMG is to demonstrate the following except

a. muscle denervation.
b. Reinnervation.
c. Diffused or localized disturbances of nerve conduction in peripheral nerves.
d. Disturbance of neurotransmission at the motor end plate.
e. not useful to follow reinnervation following peripheral nerve injury. @

31.The following are basic steps of nerve repair except

a. preparation of the stumps with separation of individual fascicles or groups of fascicles.
b. approximation of the stump.
c. Suturing under tension. @
d. Coaptation of the nerve stumps.
e. Maintenance of the coaptation.

32.The following are extrinsic risk factors for thromboembolism except

a. increased blood viscosity .
b. paralysis.
c. Immobility.
d. Lower extremity or pelvis involvement.
e. Stocking and CPM. @

33.The following pharmacologic agents are antagonists to warfarin anticoagulation except.

a. cholestyramine .
b. griseofulvin.
c. Cimetidine. @
d. Rifampin.
e. Vitamin K.

34.All the following statements are NOT true concerning the functional spinal unit (FSU) except

a. It is composed of one vertebra.

b. It moves with four degrees of freedom (2 translation and 2 rotation)
c. Load and torques applied to the FCU only along the axial axes.
d. It is a unit of coupling behavior of translation and rotation about several axes. @
e. Motor segment cannot be divided to elements or columns.

35.In the weightbearing (loaded) condition and with the ankle in the neutral , which structures contribute most to assisting inversion of the ankle ?

a. anterior talofibular ligament.
b. Tibial and talar articular surfaces. @
c. Calcaneofibular ligament .
d. Anterior talofibular and calcaneofibular ligaments.
e. Distal tibiofibular syndesmosis.

36.anabolic – androgenic steroids used in the presence of high –intensity exercise and proper diet promote the effect by:

a. decreased muscle protein synthesis .
b. decreased body weight .
c. decreased muscle strength.
d. Increased body weight. @
e. Increased aerobic power.

37. The primary function of the meniscus is

a. stability of the knee.
b. Facilitate motion.
c. Protect the ligaments from injury .
d. Distribute load on the tibial plateau. @
e. Prevent synovial impingement.

38.The lubrication of the articular surface depends on the following except

a. porosity of the tissue.
b. Loading conditions at the articular surface.
c. The rate of loading and sliding speed.
d. Increased viscosity of the lubricant. @????
e. Intrinsic stiffness and permeability of the cartilage.

39.The following hormones affect the function of the skeletal muscle except

a. insulin.

b. Growth hormone.

c. Testosterone.

d. Anabolic steroids.

e. Lipase. @

40.Contraindications to intravenous regional anaesthesia include the following except

a. severe hypertension.

b. Peripheral vascular disease .

c. Infection.

d. Surgery lasting more than 2 hours.

e. Colles' fracture. @

41.Clinical application for distraction osteogenesis include all except

a. limb lengthening.

b. Hypertrophic nonunion.

c. Deformity correction.

d. Correction of intraarticular pathology. @

e. Segmental bone loss.

42.One of the following is correct concerning osteoporosis

a. it is not an age related pathology.

b. Cancellous and trabecular bone is not affected.

c. Plain x-rays are usually not helpful unless bone loss is more than 30%. @

d. Spinal cord injury patients bone loss starts very late from skull to lower limbs.

e. Chronic alcoholism is not a cause for osteoporosis.

43.The position of arthrodesis of the knee is

a. 0-7 ° of valgus 10-15° of flexion. @

b. 0° valgus 20° flexion.

c. 20° valgus 15° flexion.

d. 10° valgus 20° flexion.

e. 5° varus 15° extension.

44.Regarding haemophilia in orthopaedic practice the following is true EXCEPT:

a- Haemophilia A (factor VIII deficiency) is an inherited sex lined recessive disorder.
b- The ankle is the least among joint suffering acute hemiarthrosis.
c- Primary prohpylaxis, the factor replacement is given at the first sign of the bleeding episode.@
d- Secondary prophylaxis is used after a child has established a pattern of frequent bleeding but before frequent joint bleeds occur.
e- Management of chronic articular involvement is aimed at preventing further deterioration with prophylactic factor replacement regimen.

45.Distraction osteogenesis DO is a gradual mechanical process of stretching two vascularised bone surfaces apart at the critical rate and rhythem such that new bone forms within the expanding gap, reliably bridges the gap and ultimately remodels to normal structure, the following are true EXCEPT:

a- Do allows for soft tissues to accommodate by stretching.
b- Bone formation can be perpetuated for over 10 cm without normal cross sectional area.
c- Angular lengthening occurs at a rate of 0-25 twice per day for DO to bridge the gap.@
d- Deformity correction necessitates the measurement of both anatomic and mechanical axes.
e- The periosteum is the major contributor to osteogenesis during distraction.

46.Regarding the elbow joint, the following are true EXCEPT:

a- It serves as fulecrum for the forearm lever.
b- It is a weight bearing joint in patients using crutches.
c- Axis of rotation for f flexion/ eztension is the center of the trochlea.
d- Axis of pronation / supination is a line from trochlea through upper ulna to distal radius@.
e- Dynamic loads around the elbow exceed body weight.

47.Regarding the wrist biomechanics, the following are true EXCEPT:

a- Flexion/ extension are primarily radiocarpal by 2/3.
b- Radial deviation is primarily intercarpal movement.
c- Ulnar dication is intercarpal and radiocarpal movement.
d- The carpus makes up a system of three links in a chain, radius, lunate, capitate.
e- Stability depends on the three link system.@

48.regarding hip biomechanics the following are true EXCEPT:

a- The joint reaction force is 3-6 times body weight.
b- Joint reaction is due to contraction of muscles crossing the joint.
c- A cane in the contralateral hand can reduce joint reaction force by 60%.
d- Trendenburge gait (shifting body weight over the hip) increases joint reaction force.@

e- Latealization of the greater trochanter reduces the joint reaction force

49.Regarding biomechanics of the knee joint, the following are true EXCEPT:

a- At 90^0 degrees of flesion, 45^0 degrees of external rotation and 30^0 degrees of internal rotation are possible.
b- Tibiofemoral joint surfaces are subjected to a loading force equal three times body weight in level walking.
c- Patellofemoral jont load rages from ½ body weight to seven times body weight with squatting and jogging.
d- Arthrodesis position is $0\text{-}7^0$ degrees valgus, $10\text{-}15^0$ degrees flexion.
e- Mechanical axis along shafts of femur and tibia.@

50.Regarding biomechanics of the shoulder joint, the following are true EXCEPT:

a- The scapular plane is 30^0 degrees anterior to the coronal plane.
b- Abduction requires external rotation to avoid impingment of greater tuberosity.
c- Abduction is due to glenhumeral motion 90^0 degrees and scapulothoracic motion 90^0 degrees.@
d- Fusion position of 50^0 degrees of true abduction , 20^0 degrees of forward flexion and 25^0 degrees of internal rotation.
e- The glenohumeral ligaments (mainly middle and inferior) and the rotator cuff care mainly responsible for stability.

51.Regarding mechanisms of wound healing, and how they contribute to various types of closure, the following are correct EXCEPT:

a- Collagen synthesis deposition and cross linking are of prime importance in primary repair.
b- Secondary wound closure is carried out by sutures when the wound is clean.@
c- Peroxides and iodopores are to be avoided in open wound dressings.
d- Spontaneous closure of open wounds by contraction is called secondary closure
e- Neodermis is induced by epithelialization in venous stasis ulcers and partial thickness wounds healing.

52.The following are specific events of phases of healing of acute primarily closed wound, EXCEPT:

a- Coagulation.
b- Inflammation.
c- Lag phase.@
d- Fibroplasia.
e- Remodeling.

53.Regarding collagen synthesis and deposition, the following are true EXCEPT:

a- Collagen is the major component of extracellular matrix of soft tissue tendons ligaments and bone.
b- Collagen is synthesized on ribosomes on the rough endoplasmic reticulum.
c- Lack of ascorbic acid and oxygen compromise collagen production leading to insufficient wound strength.
d- The collagen molecule is formed of three ploypeptide chains stabilised to one another by covalent bonds.@
e- D-penicillamin is a collagen cross link inhibitor.

54.Osteogenesis imperfecta is associated with a defect in the synthesis of :

a- Type I collagen.@
b- Type II collagen.
c- Type IV collagen.
d- Chondroitin sulfate.
e- Keratan sulfate.

55.Regarding immunobiology of the allograft the following is true EXCEPT:

a- All manuals have a major histocompatibility complex (MHC) named according to species.
b- Human lencocyte antigens (HLA) are the gene product of (MHC) in humans.
c- Recipients receiving grafts from donor s with HLA idental matches with them will not reject the graft.@
d- Identical twins will accept grafts from each other without need for immunosuperssion.
e- It is possible to suppress great degree of antigenic incompatibility.

56.In bone and cartilage graft the following is correct EXCEPT:

a- Cancellous bone autograft serve as a source of living bone cells.
b- Cortical bone autograft (fibula) severe to reconstruct skeletal defects without antigenicity problem met in allografts.
c- Fresh cartilage allograft enjoy immunologic privilage of not ned immunosupressive therapy.
d- Freeze drying allograft serve to stimulate osteoinduction.@
e- Cancellous bone autograft serve to stimulate both osteoinduction and osteoconduction.

57.What radiographic finding is the best indications of long bone healing?

a- Diffuse osteopenia near the fracture site.
b- Loss of a distinct fracture line.
c- Dence trabeculae near the fracture line.
d- Restoration of cortical continuity.@
e- Abundant callus with calcifications.

58.Which of the following conditions produces the greater reduction in the torsional strength of tubular bone?

a- Circular defect of one half of the bone diameter.
b- Narrow longitudinal defect equal to the bone diameter in length.@
c- Square defect of one fourth of the bone diameter.
d- Square defect of one half of the bone diameter.
e- 50% reduction of the endosteal bone thickness.

59.The anterior lobe of the pituitary gland secretes the following hormones, EXCEPT:

a- Thyroid-stimulating hormone.
b- Adrenocorticotropic hormone.
c- Vasopressin.
d- Prolactin@.
e- Luteinizing hormone.

60.The key histologic finding in eosinophilic granuloma is :

a- Plasma cells.
b- Multinucliated giant cells.
c- Eosinophils.
d- Eosinophilic histocytes.@
e- Lymphocytes.

61.Concerning calcium metabolism, all true EXCEPT:

a- The adult body contains approximately 1100g of calcium (1.5% of body weight).
b- 99% of the calcium is in the skeleton.
c- Most of the plasma calcium is bound to protein.@
d- 1,25-dihydroxycholecalciferol regulates d- the absorption of Ca++ from the G.I Tract.
e- About 60% of the reabsorption occurs in the proximal tubules and the reminder in the ascending limb of the loop of Henle and the distal tubule.

62.Growth is a complex phenomenon that is regulated by all of the following EXCEPT:

a- Growth hormone.
b- Insulin.
c- Glucocorticoids.
d- Thyroid hormones.
e- Rennin.@

63.Metaplasia, , occurs in the following tissue EXCEPT :

a- Connective tissue elements.
b- The gastrointestinal tract.
c- The central nervous system.@
d- The biliary system.
e- The urothelium.

64.Malignancy may complicate the following chronic inflammatory diseases EXCEPT:

a- Chronic osteomyelitis.
b- Sarcoidosis.@
c- Asbestosis.
d- Schistossomiasis.
e- Ulcerative colitis.

65.Concerning bone in the mature person all are true EXCEPT :

a- Three quarters of the substances are minerals.
b- Bed rest can deplete the mineral content.
c- Osteoblasts are associated with areas where resumption is taking place.@
d- Alkaline phosphates are associated with the lying down of mineral.
e- Calcitonin moves calcium out from the plasma and interstitial fluids.

66.A low serum calcium may be associated with, all of the following EXCEPT :

a- Hyperexcitability of peripheral nerves.
b- Reduced calcitonin release.
c- Decrease serum phosphate concentration.@
d- Vitamin D deficiency.
e- Reduced parathormone release.

67.In heterotopic calcification , all are true EXCEPT:

a- Heterotopic calcification is calcium salt deposition in tissues other than osteoid or enamel.
b- Metastatic calcification occur in dead tissue.@
c- Dystrophic calcification occurs in degenerate tissue.
d- Dystroophic calcification occur in dead tissue.
e- Metastatic calcification occurs in apparently normal tissue.

68. Regarding woven bone , all true EXCEPT:

a- It is seen in fracture healing.
b- It is seen in osteogenic tumour.
c- Muco protein matrix is more than mature bone@.
d- It is found in membranous bone, during embryonic development.
e- There is irregular arrangement of collagen bundles and osteocytes.

69.All statements about clostridial organisms are true EXCEPT:

a- It is gram negative bacilli.@
b- It is spore forming organism.
c- It is toxic organism and produce exotoxins.
d- They are obligatory anaerobes.
e- These organisms resistant to heat and desiccation.

70.All of the following about sesamoids are correct EXCEPT :

a- Minimizes friction of the tendons across bones and ligaments.
b- Modify pressure on the tendons so no obstruction to its blood supply occurs.
c- Two of them presented in the tendon of adductor pollicis.
d- The fabella is a sesamoid presented in the med. head of gastro cneumeus.@
e- Alter the direction and the line of pull of certain muscles.

71.Ilio tibial tract is a thickened band of fascia lying on the lat. Aspect of the thigh, the following are its attachements EXCEPT :

a- Lat. border of patella.
b- Lat. condyle of femur.
c- Lat. Condyle of tibia.
d- Head of fibula.
e- Tendon of vastus lateralis.@

72.About the compartmetns of the thigh, all are correct EXCEPT:

a- There are three compartments.
b- The lateral intermuscular septum is the strongest of the septa.
c- The adductors are innervated by the obturator nerve.
d- The medial compartment innverated by the femoral nerve.
e- The post. Compartment contains the flexors of the knee.@

73.All of the following muscles arise from the calcaneum EXCEPT :

a- Flexor digitorum brevis.
b- Extensor digitorum brevis.
c- Quadratus plantae.
d- Flexor hallucis brevis.@
e- Abductor hallucis.

74.Concerning the acetabulum , all of the following are correct EXCEPT :

a- The anterior 2/5 formed by the pubis.@
b- The acetabular notch bridged by the transverse ligament.
c- Its directed lateraly, downwards and forward.
d- The fossa is filled with fat.
e- The articular surface called the lunate surface.

75.The most common organism from the puncture of a nail through the sole of a tennis shoe is:

a. Pseudomonas aeruginosa
b. S. Aureus@
c. Posteurella multocida
d. Str. pyogenes
e. E.Coli

76.The most sensitive monitor of the course of infection in a child with acute osteomyelitis is:

a. ESR
b. C- reactive protein@
c. WBC count .
d. Repeated cultures.
e. Differential count of WBC.

77.The most commonly isolated organism in necrotizing fasciitis is:

a. Group A strep.@
b. Clostridium perfringens
c. S. aureus
d. Staphalococcus epidermidis
e. Pseudomonas aeruginosa

78.The following are causes of generalized osteoporoses except:

a. Prolonged recumbency
b. Protein deficiency
c. Glucocorticoids excess
d. Hypothyroidism@
e. Osteogenesis imperfecta

79.Concerning olecranon fractures all are true except

a. can be mistaken for normal epiphyseal lines in children.
b. Are avulsion fractures.
c. May be treated conservatively in above elbow plaster if undisplaced for a period of 6-8 weeks in an adult.
d. Usually require open reduction and internal fixation when displaced.
e. Sudden pull of the biceps producing the fracture. @

80. A 20 year old patient is seen 6 weeks following an undisplaced Colles' fracture. She complains of inability to extend the metacarpophalangeal joint of the thumb and weakness of extention of the interphalangeal joint. One of the following is true:

a. a.the patient requires a psychiatric opinion.
b. b.She has avulsed the extensor tendon of the thumb from the base of the distal phalanx.
c. c.She has a partial injury to the posterior interosseous nerve which will recover spontaneously.
d. d.Arrangements should be made to perform a tendon repair to restore function of long extensor of the thumb. @
e. e.the disability was probably present at the time of the original injury and should have been observed by the casualty doctor.

81. Which of the following factors is characteristic of the early changes seen in the articular cartilage of a patient with osteoarthritis?

a. Decrease in water content
b. Decrease in the DNA per unit tissue
c. Increase in relative collagen concentration.@
d. Increase in proteoglycan aggregation.
e. increase in water content.

82. A 23 old man experiencing impotence and penile numbness following intramedullary nailing for a femoral shaft fracture is most likely due to:

a. unrecognized urologic trauma
b. injury to S2-S3
c. pudendal nerve injury @
d. posttraumatic stress
e. pudendal artery injury.

83. During four compartment fasciotomy for compartment syndrome of the leg, what nerves are decompressed in the anterior and lateral compartments respectively ?

a. Posterior tibial and superficial peroneal
b. superficial peroneal and sural
c. Deep peroneal and sural
d. Deep peroneal and superficial peroneal@
e. anterior tibial and deep peroneal.

84. When using intramedullary nails for fractures of the femoral shaft in adolescents , the entry point should be moved away of from the piriformis fossa to avoid injury to what structures?

a. Greater trochanter apophysis
b. posterior superior ascending branch of the medial femoral circumflex artery@
c. posterior inferior ascending branch of the medial femoral circumflex artery
d. ascending branch of the lateral femoral circumflex artery
e. metaphyseal blood supply to the neck of femur.

85. Exertional herniation of muscle through a fascial defect in the anterolateral aspect of the lower leg can cause entrapment of which of the following:

a. Sural
b. saphenous
c. Deep peroneal
d. superficial peroneal@
e. anterior tibial

86. spinal cord ends at

a. T12-L1.

b. L1-L2. @

c. L2-L3.

d. T11-T12.

e. L3-L4.

87. Posterior column system of Denis is composed of the following except

a. posterior long. Ligament. @

b. pedicles.

c. Spinous process.

d. Intarspinous ligaments.

e. Supraspinous ligaments.

88. Which one of the following vertebtae doesn't have transverse process ?

a. Atlas C1.@

b. Axis C2.

c. C3.

d. C4.

e. C5

89. Which root is compressed between L4-L5 vertebrae?

a. L4.

b. L5. @

c. S1.

d. S2.

e. L3.

90.An hour after an uncomplicated transection of spinal cord at the level of C8 in an adult human, one of the following is correct:

a- An inselateral extensor plantar response (babinski positive).
b- Ispelateral spasticity below the level of the lesion.
c- Loss of temperature sense in the ipselateral leg.@
d- Loss of position sense in the ispelateral leg.
e- Loss of crude touches sense in the ipselateral leg.

91.Injections of parathyroid hormone leads to all of the following EXCEPT:

a- Increased in urinary phosphate.
b- Increased production of dihyro-xycholecalcifferol in the kidney.
c- An increase in the number of osteoblasts.@
d- A rise in plasma calcium.
e- Increased re-absorption of calcium in the kidney.

92.Concerning bone in the mature person all are true EXCEPT :

a- Three quarters of the substances are minerals.
b- Bed rest can deplete the mineral content.
c- Osteoblasts are associated with areas where resumption is taking place.@
d- Alkaline phosphates are associated with the lying down of mineral.
e- Calcitonin moves calcium out from the plasma and interstitial fluids.

93.A low serum calcium may be associated with, all of the following EXCEPT :

a- Hyperexcitability of peripheral nerves.
b- Reduced calcitonin release.
c- Decrease serum phosphate concentration.@
d- Vitamin D deficiency.
e- Reduced parathormone release.

94.All of the following about active transport across cell membrane, are true EXCEPT:

a- Increased by hypothermia.@
b- Transfer hydrogen ions into gastric juice against a concentration gradient.
c- Requires energy production by the cell.
d- Aids hydrogen ion secretion by kidney tubule cells.
e- Prevents excess of water from entering the cell.

95.Following moderate blood loss (500 ml), all of the following are correct EXCEPT:

a- The arterial blood pressure may be normal.
b- Skin vessels are constricted.
c- Lymph flow from peripheral tissue is diminished.
d- The maintenance of brain blood flow is mediated by cerebral vasoconstriction.@
e- There are nothing happened which could increase extracellular assimilate.

96.Wound healing is enhanced by the following EXCEPT:

a- A balanced diet.
b- Zinc.
c- Cortizol@
d- Oxygen.
e- Vit. C.

97.Ischaemic necrosis is a recognized complication of fractures of the following EXCEPT :

a- Talus.
b- Os-calcis.@
c- Scaphoid.
d- Navicular.
e- Femoral head.

98.The following are true, of body's fluid and electrolytes EXCEPT:

a- Total body water is 40-45 litres.
b- In the intracellular fluid the principal cation are potassium and magnesium.
c- Potassium, calcium and magneium are necessary for normal cell function.
d- Colloids are responsible to maintain extracellular fluid osmotic pressure.@
e- Rapid depletion of salt from the body leads to circulatory failure.

99.The following are direct and indirect factors in controlling the fluid balance in the body EXCEPT:

a- The sensation of thirst.
b- Antidiuretic hormone of the pitutary gland.

c- About 80% of excreted sodium is normally reabsorbed by the proximal convoluted tubules of glomerule.
d- Baro receptors in bath venous and arterial sides of circulatory tree has no effect on water balance.@
e- Aldosterone hormone of the zona glomerulosa of the adernal cortex.

100. In acid base balance in the body the following are correct EXCEPT:

a- Bicarbonate concentration and partial pressure of CO2 are important factors in maintaining the blood PH at 7-4.
b- PCO2 measurement in arterial blood is an accurate measure of respiratory acidosis or alkalosis.
c- Hyperventilation can produce respiratory alkalosis.
d- In shock patient develops metabolic alkalosis.@
e- In renal disease where anuria or failure of distal renal tubules to fuction, this results in metabolic acidosis.

49) B
50) D
51) C
52) C
53) D
54) E
55) D
56) A
57) E
58) C
59) E
60) D
61) D
62) B
63) B
64) C
65) B
66) B
67) D
68) C
69) B
70) E
71) B
72) C
73) D
74) D
75) A
76) D
77) A
78) E
79) C
80) E
81) C
82) D
83) B
84) D
85) D
86) D
87) E
88) E
89) D
90) C
91) A
92) C
93) C
94) D
95) E
96) E

49) E
50) C
51) B
52) C
53) D
54) A
55) C
56) D
57) D
58) B
59) D
60) D
61) C
62) E
63) C
64) B
65) C
66) C
67) B
68) C
69) A
70) D
71) E
72) E
73) D
74) A
75) B
76) B
77) A
78) D
79) E
80) D
81) C
82) C
83) D
84) B
85) D
86) B
87) A
88) A
89) B
90) C
91) C
92) C
93) C
94) A

95) D
96) C

97) B
98) D
99) D
100) D

1. Mallet finger is produced by

a. Ulnar nerve palsy.
b. Cut flexor digitorum sublimis.
c. Cut flexor digitorum profundus.
d. Cut extensor tendon of finger. @
e. Cut of extensor pollicic longus.

2. The condition " stress fracture" may most closely simulate

a. An ununited fracture.
b. A fresh fracture.
c. An osteomyelitis.
d. A malignant tumour. @
e. A benign tumour.

3. Concerning Kienbock's disease of the wrist all are false except

a. Most frequently occurs in children.
b. Is usually bilateral.
c. May result in degenerative arthritis of the wrist. @
d. Is a disorder without clinical significance.
e. Is caused by an inborn error of metabolism.

4. All may cause shoulder pain except
a. A torn rotator cuff.
b. Acute cholecystitis.
c. Cervical spondylosis.
d. Collapse of the 10^{th} thoracic vertebra. @
e. Diaphragmatic pleurisy.

5. All are true regarding frozen shoulder syndrome except
a. Males and females are equally affected.
b. Frequently all movements of shoulder are decreased.
c. There is usually a prodromal febrile illness. @
d. It is usually a self-limiting disorder.
e. Radiological examination is normal.

6. Regarding trigger finger all are true except
a. the finger becomes fixed in flexion and requires excessive manual reduction.
b. associated with rheumatoid arthritis.
c. associated with palpable nodule on the extensor tendon. @
d. Occurs in children and adults.
e. treated by division of the proximal part of the fibrous sheath.

7. Regarding tendon transfer for irreparable radial nerve palsy, all are true except
a. The extensor digitorum communis tendons are exposed from proximal radial to distal ulnar direction.
b. The patient with high radial nerve palsy loses the ability to extend the wrist, finger and thumb.
c. The transferred tendons should be tunneled through subcutaneous fat.
d. In palmaris longus absence the pronator teres transferred to extensor pollicis longus. @
e. Tendon transfer of flexor carpi ulnaris to extensor digitorum communis.

8. All are true regarding osteoid osteoma except
a. consists of an area of dense cortical bone thickening with a central lucent area.
b. Classically produces pain relieved by aspirin
c. Occasionally becomes malignant. @

d. May show up on a technetium-99m bone scan when not obvious on routine radiographs.
e. Is treated by excision of the cortical thickening and the nidus.

9. Regarding calcification in the tendinous rotator cuff all are true except
   a. seen in the subacromial region on an antero-posterior radiograph of the shoulder.
   b. frequently associated with a significant shoulder injury. @
   c. Can be an incidental finding.
   d. Can present as acute pain with restriction of movements in the shoulder.
   e. The pain is due to the calcific deposit which causes an acute inflammatory reaction.
10. Concerning congenital sublaxation of the wrist (Madelung's deformity) all are true except
   a. It consists of dorsal and lateral bowing of the distal radius.
   b. The deformity is more common in females.
   c. It is associated with premature fusion of the ulnar half of the distal radial epiphysis.
   d. It is treated by shortening of the distal end of the ulna.
   e. It is usually unilateral. @
11Concerning congenital pseudoarthrosis of the tibia all are false except
   a. It is usually bilateral.
   b. Can be invariably successfully treated by a cancellous bone graft.
   c. Presents with anterolateral bowing of the tibia. @
   d. The commonest site is at the junction between upper and middle third.
   e. It is a very common disorder.
12. The carpal tunnel syndrome may be associated with all the following except
   a. diabetes.
   b. Rheumatoid arthritis.
   c. Syringomyelia. @
   d. Acromegaly.
   e. Myxoedema.
13. All are correct regarding Kienböck's disease except
   a. it is a lunatomalacia with the characteristics of wrist pain.
   b. The pathological changes in the lunate are believed to be due avascular necrosis.
   c. The Y pattern of intraosseous blood supply of the lunate is the most common.
   d. Grip strength is diminished.
   e. The lunate at risk refers to the lunate that is associated with a long ulna. @
14. All are correct concerning rheumatoid arthritis except
   a. rheumatoid factor (RF) is an IgM autoantibody.
   b. Metacarpophalangeal and proximal interphalangeal joints are characteristically involved.
   c. Flexor pollicis longus is the most common flexor tendon to rupture.
   d. The boutonniere deformity may be present in RA.
   e. Bouchard's nodes refer to enlargement of the distal interphalangeal joints. @
15. One is not correct concerning Dupuytren's contracture
   a. mode of inheritance is autosomal dominant.
   b. Strongly associated with HIV infection.
   c. The ring and small fingers are most commonly involved.
   d. An aggressive and severe form begins at an early age .
   e. Women are more frequently affected. @
16. When is total knee arthroplasty a contraindication in a hemophilic patient?
   a. with factor levels above 90%.
   b. In the presence of an inhibitor. @
   c. In an ankylosed knee.
   d. In the presence of flexion contracture greater than 10 degrees.

e. In the presence of a positive HIV test.

17. For an all-polyethylene tibial component , the adequate thickness (in mm) of the Polyethylene needed to minimize wear is

a. 3
b. 5
c. 8 @
d. 11
e. 13

18. Following total knee arthroplasty , the tendency for Patellar dislocation is most commonly associated with which of the following conditions

a. internal rotation of the tibial component. @
b. external rotation of the tibial component.
c. External rotation of the femoral component.
d. Medial translation of the patellar component.
e. Medial translation of the femoral component.

19. During exposure of the posterolateral knee corner, the structure that is encountered between the popliteus tendon and fibular collateral ligament is

a. peroneal nerve .
b. iliotibial band.
c. Biceps tendon.
d. Oblique popliteal ligament.
e. Inferior geniculate artery. @

20. When balancing soft tissue on a total knee replacement What is the most appropriate next step when the knee is correctly balanced on flexion but loose in extension?

a. Augment the distal portion of the femoral component. @
b . augment the posterior condyles of the femoral component.
c. advance the tibial tubercle.
d. insert a bone graft on the proximal tibial surface.
e. Insert a thicker tibial component.

21.During a posterior approach to the hip joint, profuse bleeding is encountered during incision of the quadratus femoris. The bleeding is most likely from which artery?

a. superior gluteal.
b. Inferior gluteal .
c. Lateral frmoral circumflex.
d. Medial femoral circumflex. @
e. Posterior femoral circumflex.

22. What is the major cause of failure of a cemented total hip arthroplasty after 15-20 years?

a. wear of the bearing surface. @
b. femoral loosening.
c. Acetabular loosening.
d. Bone stock loss.
e. Stem breakage.

23. During a revision total hip replacement, a retractor Is placed beneath the rectus tendon. The retractor slips many times and is replaced over the top of the rectus tendon. The structure in immediate proximity to the retractor that is most likely to be damaged is

a. profunda femoris artery.
b. Femoral nerve. @
c. Femoral vein.
d. Femoral artery.
e. Lateral femoral cutaneous nerve.

24.The most common long-term complication of cemented total hip arthroplasty in patients under 50 years of age is

a. infection.
b. Dislocation.
c. Periprosthetic femur fracture.
d. Acetabular component loosening. @
e. Femoral stem fracture.

25.Why is a cobalt-chrome alloy preferred over a titanium alloy for a cemented femoral component in a total hip arthroplasty?

a. less stiffness.
b. Less particulate metal debris. @
c. Elastic modulus closer to bone cement.
d. Cost-effectiveness.
e. Better cement bonding ability.

26.Which of the following surgical approaches in primary total hip arthroplasty is associated with the highest incidence of hip dislocation?

a. anterior .
b. anterolateral.
c. Posterior. @
d. Transtrochanteric.
e. Lateral.

27. In lateral subtalar dislocation of the foot, and attempts at closed reduction fail. Which of the following structures most likely preventing reduction?

a. Tibialis anterior
b. Tibialis posterior@
c. Peroneal longus
d. Extensor digitorum communis
e. peronius previous

28.Concerning the anterolateral approach to the ankle, all the following are true except:

a. It gives excellent access to the ankle joint
b. It avoids all important vessels and nerves
c. dorsalis pedis artery lies laterally in the wound@
d. The deep peroneal nerve lies medially
e. the deltoid ligament might be injuried

29.The normal Bohler's angle of os calcis is:

a. 5 degrees

b. 10 degrees
c. 15 degrees
d. 30 degrees@
e. 50 degrees

30.Morton's metatarsalgia is characterized by one of the followings:

a. Presenting symptom is numbness in the region of the 3rd and 4th metatarsal heads
b. It is caused by a neuroma between the heads of the 3rd and 4th metatarsals@
c. The symptoms occur when the patient walks bare footed
d. Surgical treatment is associated with high recurrence rate
e. chemical neirectomy is the treatment of choice

31. In charcot- Marie Tooth disease all are true except:

a. Males are affected than females
b. The more late the onset the more sever the presentation@
c. Clowing of the toes , cavus of the foot and ankle equinus is late manifestations .
d. Is a hereditary neurologic disorder characterized by weakness of peroneal muscles
e. muscle weakness is characteristic

32.The following statements about congenital scoliosis are true except

a. prognosis depends on the type and its location in the spine.
b. Single hemivertebrae may produce a progressive spinal deformity.
c. Hemivertebra is a failure of segmentation. @
d. Unilateral unsegmented bars are a frequent congenital cause of progressive spinal deformity.
e. Surgical treatment of a congenital spinal deformity depends on its severity and the patient's age.

33.In scoliosis , one statement is correct

a. bracing is the primary treatment for patients with infantile and juvenile idiopathic scoliosis. @
b. the onset of juvenile scoliosis is between birth and 3 years of age.
c. There is no difference in the prevalence berween males and females.
d. Pulmonary symptoms and vital capacity in scoliotic patients doesn't correlate with degree of thoracic curves.
e. Scoliosis occurs in 50% of children with a parent who had adolescent idiopathic scoliosis.

34.In neurofibromatosis all are true except

a. dyastrophic neurofibromatosis curves do not resond to any form of bracing.
b. Indications of nondyastrophic curves for treatment are the same as the idiopathic scoliosis.
c. PSSF for nondyastrophic curves is not enough. @
d. Dyastrophic neurofibromatosis is characterized by rib penciling , vertebral scalloping and dural ectasia.
e. MRI or myelograms are recommended for preoperative assessment.

35.concerning bone tumours of the spine , the following statements are true except

a. osteoblastomas and aneurysmal bone cysts usually occur in the posterior elements of the spine.
b. Giant – cell tumour are uncommon in the spine.
c. Eosinophilic granuloma is known as vertebra plana.
d. Scoliosis cannot develop long after a child is exposed to radiation for treatment of a tomour. @
e. Patients with neurologic deficits can be treated with decompressive laminectomy.

36.one of the following statements is correct concerning tuberculosis of the spine

a. tuberculosis is still very rarely affects the spine .
b. tuberculosis affects the vertebral bodies and doesn't destroy the disc until very late in the disease. @
c. neurologic deficit is very late in the disease.
d. Treatment with antituberculous therapy and plaster jacket immobilization is not enough.
e. Chest radiograms are normal in all cases.

37. Concerning spondylolysis all are true except

a. spondylolysis is a defect in pars interarticularis .

b. it is a common cause of pain in children and adolescents.

c. It is rare in gymnasts and athletes whose activity requires repetitive flexion / extension.@

d. PET scan (positron emission computed tomography scanning) may be helpful in identifying the defects.

e. Treatment is basically aimed for symptomatic relief rather than fracture healing.

38. the following statements are correct concerning spondylolisthesis except

a. it is a forward slippage of one vertebra on another.

b. Treatment depends on symptoms and the degree of the slip.

c. Slip angle is a useful measure to quantify the lumbopelvic deformity.

d. Intractable pain and neurologic compromise is not an indication for surgical treatment. @

e. Severe slip grade can be associated with radicular findings of L5.

39.In ankylosing spondylitis patients the following are true except

a. HLA B27 is positive in all patients. @

b. The patients are usually young men in the third and fourth decade of life.

c. Bamboo spine can be demonstrated on radiographs at the end stage of the disease.

d. Flexion deformity of both hip joints and severe kyphosis might occur.

e. Sacroiliac joint obliteration and marginal syndesmophytes allow radiographic differentiation from other entities.

40.In spinal stenosis all true except

a. spinal stenosis is the most common cause of neurologic leg pain in old population.

b. The usual pathology is degenerative changes of the three –joint complex.

c. The conservative means are important in management of patients with spinal stenosis.

d. Patients with achondroplasia are immune for spinal canal stenosis. @

e. Adequate decompression can be helpful in spinal stenosis without destabilizing the spine.

41.The following symptoms are related to neurologic claudication except

a. Pain is provoked by walking variable distance.

b. Leg pain is relieved by standing. @

c. Relief is obtained by positional change.

d. Van Gelderan bicycle test is negative.

e. Pain is reduced by sitting.

42.The most common organism from the puncture of a nail through the sole of a tennis shoe is:

a. Pseudomonas aeruginosa
b. S. Aureus@
c. Posteurella multocida
d. Str. Pyogenes
e. E.Coli

43.The most sensitive monitor of the course of infection in a child with acute osteomyelitis is:

a. ESR
b. C- reactive protein@
c. WBC count .
d. Repeated cultures.
e. differential count of the WBC.

44.The most commonly isolated organism in necrotizing fasciitis is:

a. Group A strep@.
b. Clostridium perfringens
c. S. aureus
d. Staphalococcus epidermidis
e. pseudomonas aerugenosa

45.The following are causes of generalized osteoporoses except:

a. Prolonged recumbency
b. Protein deficiency
c. Glucocorticoids excess
d. Hypothyroidism@
e. osteogenesis imperfecta

46. In cretinism the following are correct except:

a. Hypothyroidism present from birth

b. Bone growth is delayed
c. early epiphyseal closure occur@
d. growth hormone secretion is depressed
e. short stature

47.Regarding pigmented villo-nodular synovitis one is true

a. Occurs only in synovial joints.
b. Is more common in males.
c. Contains large amounts of haemosiderin. @
d. Can be excised without fear of local recurrence.
e. Is much commoner in haemophiliacs compared to the normal population.

48.Concerning olecranon fractures all are true except

a. can be mistaken for normal epiphyseal lines in children.
b. Are avulsion fractures.
c. May be treated conservatively in above elbow plaster if undisplaced for a period of 6-8 weeks in an adult.
d. Usually require open reduction and internal fixation when displaced.
e. Sudden pull of the biceps producing the fracture. @

49.Concerning Smith's fracture all are false except

a. occurs at the distal end of the radius with palmar tilt and dorsal displacement of the distal fragment.

b. usually requires a lateral radiograph of the wrist to differentiate it from a Colles' fracture. @

c. can usually be treated in a Colles'-type plaster after reduction

d. usually requires 12 weeks immobilization before union occurs.

e. The fracture is often difficult to reduce under general anaesthesia.

50.Regarding fractures of the hand all are true except

a. fractures of the distal phalanx is the most common fracture in the hand.

b. distal phalanx fractures may involve: tuft ,shaft and intraarticular regions.

c. a pilon fracture is a comminuted intraarticular fracture of the proximal articular surface of the middle phalanx.

d. malunion is the most common bony complication of a phalangeal fracture.

e. Bennett's fracture is a fracture subluxation of the first metacarpal base with displacement of the volar ulnar aspect of metacarpal base. @

51.Regarding dislocations of the lunate all are true except

a. lunate dislocations are usually the final stage of perilunate dislocations of the carpus.
b. the capitate is aligned with the lunate on lateral radiograph. @

c. followed a fall on outstretched hand.
d. Avascular necrosis of the lunate is a known complication post reduction.
e. The patient may develop symptoms of acute median nerve compression.

52.Injury to the brachial plexus may be caused by all the following except
a. an anterior dislocation of the shoulder.
b. Distraction of the head and shoulder.
c. Infiltration by a malignant tumour.
d. penetrating wound into the supraclavicular fossa.
e. Spontaneous pneumothorax. @

53. A 20 year old patient is seen 6 weeks following an undisplaced Colles' fracture. She complains of inability to extend the metacarpophalangeal joint of the thumb and weakness of extention of the interphalangeal joint. One of the following is true
a.the patient requires a psychiatric opinion.
b.She has avulsed the extensor tendon of the thumb from the base of the distal phalanx.
c.She has a partial injury to the posterior interosseous nerve which will recover spontaneously.
d.Arrangements should be made to perform a tendon repair to restore function of long extensor of the thumb. @
e.the disability was probably present at the time of the original injury and should have been observed by the casualty doctor.

54.In posterior dislocation of the shoulder , all are true except
a.if the dislocation is unstable after reduction, a shoulder spica may be necessary.
b.Habitual dislocations are often associated with psychiatric problems.
c.Recurrent dislocation following treatment is a recognized complication.
d.Axillary nerve injury is common. @
e.Diagnosis can be difficult on routine radiographs

55.A collar and cuff bandage would be suitable for all the following except
a. undisplaced fracture of the neck of the humerus.
b. undisplaced midshaft fracture of the clavicle.
c. reduced dislocation of the elbow.
d. reduced Monteggia fracture in an adult. @
e. crack fracture of the radial head.

56.All are true concerning a pulled elbow except
a.subluxation of the head of the radius from the annular ligament.
b.Most frequently occurs in children under 5 years.
c.Pain and restriction of rotation of the arm are the most common symptoms.
d.Usually requires manipulation under anaesthesia to relieve symotoms. @
e.Radiographs are normal.

57.Complications of a fracture of the middle third of the radius and ulna treated by plate\ fixation include all of the following except
a.non-union .
b.restriction of pronation and supination.
c.Cross union.
d.Infection.
e.Damage to the ulnar nerve in proximal radial fractures. @

58. All are true regarding distal radius fractures except
a. Salter- Harris type II epiphyseal separation is the most common epiphyseal injury in the distal radius.
b. Intrinsic ligament tears are associated with distal radius fractures.
c. The most important factor in determining the outcome of an intraarticular fracture is the amount of residual articular incongruity.

d. Incongruity less than 1 cm is strongly associated with the subsequent development of symptomatic posttraumatic arthritis. @
e. Unstable fractures may be stabilized by closed reduction and percutaneous pinning.

59.Which nerve of the following is commonly involved in fracture of medial condyle of humerus

a. median nerve.
b. Ulnar nerve. @
c. Radial nerve .
d. Musculocutaneous nerve.
e. Posterior interosseous nerve.

60. Concerning fracture of proximal humerus, all are true except

a. conservative treatment is to be preferred for elderly patients with minimally displaced fractures.
b. Damage to the lateral ascending branch of the anterior circumflex artery may lead to avascular necrosis.
c. displaced tuberosity fragments are best treated by open reduction and internal fixation.
d. with the four parts fracture the function remains satisfactory in spite of partial avascular necrosis.
e.ORIF is recommended when blood supply is at risk. @

61 .Regarding fracture distal humerus all are true except

a. reduction is usually the most demanding part of surgery.
b. A distally pointed chevron olecranon osteotomy best exposes the fracture.
c. Articular fractures require anatomical reconstruction and rigid internal fixation.
d. The presence of a little collateral new bone on x-rays does represent a clinical problem. @
e. extraarticular olecranon osteotomy may be used.

62.All are true regarding fracture of scapula except

a. operative management is indicated in displaced and unstable fractures of the neck.
b. Isolated fractures of the anterior glenoid rim may associated with shoulder dislocation.
c. Glenoid rim fractures and intraarticular fractures are typically associated with a displaced fracture of the midshaft of the ipsilateral clavicle.
d. ORIF has been the rule for treating of the vast majority of scapular fractures. @
e. fractures of the first ribs should be ruled out.

63.. What is the most common source of loose bodies in the knee?

a. osteophytes
b. meniscal fragments
c. synovial osteochondromatosis
d. osteochondritis dissecans@
e. Forgein body.

64.Tibial osteotomy is indicated for correction of varus deformity of the knee in a young adult with which of the following conditions:

a. Alkaptonuria
b. Psoriatic arthritis
c. Rheumatoid arthritis
d. osteochondritis dissecans@
e. meniscal injury.

65. Which of the following factors is characteristic of the early changes seen in the articular cartilage of a patient with osteoarthritis?

a. Decrease in water content
b. Decrease in the DNA per unit tissue
c. Increase in relative collagen concentration@.
d. Increase in proteoglycan aggregation.
e. increase in water content.

66. Avulsion fracture of the proximal lateral tibia (Segond's fracture) in twisting injures is pathognomonic of:

a. torn medial meniscus
b. torn anterior cruciate ligament.@
c. fracture of the lateral tibial plateau
d. torn lateral collateral lig.
e. dislocated knee.

67. A 23 old man experiencing impotence and penile numbness following intramedullary nailing for a femoral shaft fracture is most likely due to:

a. unrecognized urologic trauma
b. injury to S2-S3
c. pudendal nerve injury @
d. posttraumatic stress
e. pudendal artery injury.

68. Midshaft fibular osteotomy places which of the following structures most at risk of injury:

a. sural nerve
b. peroneal artery@
c. deep peroneal nerve
d. anterior tibial artery
e. palsy of the peroneal muscle.

69. A man report anterior knee pain, especially with stair climbing or squatting. Examination reveal no evidence of patellar malalignment . Radiographic and MRI studies are normal. Which of the following would best demonstrate the pathology?

a. Ultrasound
b. CT scan
c. Arthrogram
d. Technetium-99 bone scan@
e. EMG.

70. Upon detachment of the Quadratus femoris muscle, brisk bleeding is noted, which of the following arteries is most likely injured?

a. Branch of the obturator
b. Descending branch of the inferior gluteal
c. Ascending branch of the medial femoral circumflex@
d. Transverse branch of the lateral femoral circumflex

e. descending branch of the medial femoral circumflex.

71. During four compartment fasciotomy for compartment syndrome of the leg, what nerves are decompressed in the anterior and lateral compartments respectively ?

a. Postcrior tibial and superficial peroneal
b. superficial peroneal and sural
c. Deep peroneal and sural
d. Deep peroneal and superficial peroneal@
e. anterior tibial and deep peroneal.

72. When using intramedullary nails for fractures of the femoral shaft in adolescents , the entry point should be moved away of from the piriformis fossa to avoid injury to what structures?

a. Greater trochanter apophysis
b. posterior superior ascending branch of the medial femoral circumflex artery@
c. posterior inferior ascending branch of the medial femoral circumflex artery
d. ascending branch of the lateral femoral circumflex artery
e. metaphyseal blood supply to the neck of femur.

73. In external fixation for fracture pelvis all are true except

a. fast and effective method of early stabilization
b. reestablish pelvic ring .
c. decreases blood loss in pelvic fractures
d. Best used for patients with floating iliac wings@
e. reestablish the pelvic volume.

74. In angiography for pelvic bleeding all are true except

a. small percentage of patients with pelvic fractures will benefit from angiography and immobilization
b. The majority of blood loss is arterial@
c. Prior to angiography other sources of bleeding should be ruled out
d. Stabilization of the fracture in haemodynamic unstable patients should be done prior to angiography
e. top emergency when needed.

75 . In pelvic fractures all are true except

a. Concomitant urologic injures occur in approximately 15%
b. Blood at the meatus and high prostate are most common findings of bladder injury@
c. The incidence of bladder injures correlates with the number of pubic rami fractured
d. Repeated examination of an unstable pelvic fractures may lead to greater blood loss
e. stabilize the pelvis in unstable patient.

76. All of the following methods can be used in the control of hemorrhage associated with pelvic fractures except:

a. Early reduction and immobilization
b. Embolisation
c. Inflated inter arterial balloon
d. Infusion of vasoconstrictor agents@
e. open reduction and internal fixation.

77. The compressive force across the patellofemoral joint while descending stairs is equivalent to:

a. body weight
b. 2 to 3 times body weight@
c. 3 to 4 times body weight

d. 4 to 5 times body weight
e. 5 to 6 times body weiht

78. Exertional herniation of muscle through a fascial defect in the anterolateral aspect of the lower leg can cause entrapment of which of the following nerves:

a. Sural
b. saphenous
c. Deep peroneal
d. superficial peroneal@
e. e .anterior tibial

79. Concerning failed back syndrome , all are true except

a. poor patient selection.
b. Recurrent herniation at another level.
c. Infection.
d. Vertebral stability. @
e. Unrecognized lateral stenosis.

80. The most common site for vertebral column injury is

a. cervical thoracic spine.
b. Thoracolumbar spine. @
c. Lumbosacral spine.
d. Sacrococcygeal spine.
e. Thoracic spine.

81. spinal cord ends at

a. T12-L1.
b. L1-L2. @
c. L2-L3.
d. T11-T12.
e. L3-L4.

82. Posterior column system of Denis is composed of the following except

a. posterior long. Ligament. @

b. pedicles.

c. Spinous process.

d. Intarspinous ligaments.

e. Supraspinous ligaments.

83. One of the following statements concerning thoracic and lumbar fractures is INCORRECT

a. an axial compression load will result in anterior flexion load to the vertebral body.

b. Flexion forces cause anterior compression and posterior tension of the spinal segment.

c. Fracture dislocations indicate unstable injury.

d. Wedging more than 10% of its anterior height of the vertebral body is considered unstable injury. @

e. Pure ligamentous injuries of the spine are at risk for late instability.

84. The differential diagnosis of all osteoporotic compression fractures include the following except

a. Tumours of the spine.

b. Infection of the spine .

c. Metabolic disease.

d. Metastatic disease.

e. Dysmenorrhea. @

85. Which one of the following vertebtae doesn't have transverse process ?

a. Atlas C1.@

b. Axis C2.

c. C3.

d. C4.

e. C5.

86. Which root is compressed between L4-L5 vertebrae?

a. L4.
b. L5. @
c. S1.
d. S2.
e. L3.

87. Which ligament tends to prevent hyperextension of the vertebral column?

a. PLL (post. Long. Lig.)

b. ALL (Ant. Long. Lig.) @

c. Interspinous ligament.

d. Ligamentum flavum.

e. Supraspinous ligament.

88. The reflex voiding center is locted in the spinal cord at the level.

a. S1-S3. cord segments

b. S2-S4. cord segments @

c. L3-S2. cord segments

d. L2- S1 cord segments

e. S4-S5 cord segments.

89.Regarding the cubital fossa all true except

a. It is triangular area between pronator teres, brachioradialis and a line joining humeral epicondyles.
b. It is triangular area between pronator teres, flexor digitorum superficialis and a line joining humeral epicondyles. @
c. Median nerve passes through the fossa medial to brachial artery.
d. Radial nerve and posterior interosseous nerve pass through the fossa.
e. Biceps tendon passes through it lateral to brachial artery.

90.Regarding radial nerve all true except

a. It is the direct continuation of the posterior cord.
b. It gives nerve supply to brachioradialis from the main trunk.
c. Posterior interosseous supplies the supinator muscle.
d. Posterior interosseous supplies the anconeus.@

e. The main trunk supplies part of brachialis.

91.Regarding the piriformis muscle all true excpt

a. It is a key to the arrangement of structures of gluteal region.
b. Its insertion is to greater trochanter.
c. Sciatic nerve passes over it.@
d. Inferior gluteal nerve and vessels pass below it.
e. Superior gluteal nerve and vessels pass over it

92. Regarding inversion and eversion of the foot all true except

a. Tibialis anterior and posterior are responsible for inversion.
b. Peroneus longus , brevis and tertius are responsible for eversion.
c. Eversion and inversion occur mainly at the mid-tarsal joint.@
d. Eversion and inversion occur mainly at the subtalar joint.
e. Flexor and extensor hallucis assist in inversion.

93.All the following are causes of hypercalcemia except

a. Sarcoidosis.
b. Immobilization.
c. Destructive bone lesions.
d. Magnesium deficiency. @
e. Addison's disease.

94.Regarding tests of bleeding disease all are true except

a. PTT is the test for intrinsic system and common pathway.
b. Prothrombin time is the test for common pathway. @
c. Bleeding time is increased in failure of vascular contracture.
d. Bleeding time is increased due to inadequate platelet activity.
e. If both PTT and PT are normal the defect is in the vessel wall or platelets.

95.Regarding calcitonin all are true except

a. It reduces bone resorption.
b. The effects of calcitonin are more marked on older than young animals.@
c. It is secreted by parafollicular or C cells.
d. Calcitonin has been used in the treatment of hypercalcemia.
e. In medullary carcinoma there is excess calcitonin secretion.

96.Regarding parathyroid hormone all are true except

a. Increases phosphate excretion.
b. Decreases plasma phosphate level.
c. Stimulates the action of osteoblasts. @
d. Increases calcium excretion.
e. Increases synthesis of 1,25 dihydroxycholecalciferol.

97. Regarding compartment syndrome all are true except

a. Absolute value > 30 mmHg.
b. Derived value > 30mmHg. @
c. Pulses rarely absent.
d. Muscle contusion is an aetiological factor.
e. Hypoxia secondary to arterial or venous occlusion is an aetiological factor.

98. Regarding reflex sympathetic dystrophy all are true except

a. Pain more than expected for the degree of injury.
b. There is intolerance to cold.

c. Sympathetic blockade relieves the pain. @
d. Drugs used include antidepressants and anticonvulsants.
e. Physical therapy is an important part of treatment.

99. Regarding hospital infection all are true except

a. If the organisms derived from external sources it is called cross infection.
b. If the organisms derived from the patient himself it is called autoinfection.
c. Wound infection increases with the duration of operation.
d. Incidence of hospital infection has no relation with the size of the wound. @
e. Wound infection increases in the presence of drainage tube.

100. Regarding total body irradiation all are true except

a. It is grouped according to the dosage.
b. It is grouped according to the systemic manifestations.
c. Cerebral syndrome usually leads to death.
d. Patients never recover from gastrointestinal syndrome. @
e. Haematological phase usually due to lower dosage.

97) D
98) D
99) C
100) D
101) C
102) C
103) D
104) C
105) B
106) E
107) C
108) C
109) E
110) E
111) E
112) B
113) C
114) A
115) E
116) A
117) D
118) A
119) B
120) D
121) B
122) C
123) B
124) C
125) D
126) B
127) B
128) C
129) A
130) C
131) D
132) B
133) C
134) D
135) A
136) D
137) B
138) B
139) B
140) A
141) D
142) C
143) C
144) E

49) B
50) E
51) B
52) E
53) D
54) D
55) D
56) D
57) E
58) D
59) B
60) E
61) D
62) D
63) D
64) D
65) C
66) B
67) C
68) B
69) D
70) C
71) D
72) B
73) D
74) B
75) B
76) D
77) B
78) D
79) D
80) B
81) B
82) A
83) D
84) E
85) A
86) B
87) B
88) B
89) B
90) D
91) C
92) C
93) D
94) B
95) B
96) C

97) B
98) C
99) D
100) D

1. Patellar reflex is controlled by:-

   a. L1
   b. L2
   c. L3
   d. L4
   e. L5

2. Flexion of the distal interphalangeal joint of the index finger is controlled by.-

   a. Post. interosseous nerve.
   b. Ant. interosseous nerve.
   c. Musculo-cutaneous nerve.
   d. Ulnar nerve.
   e. Radial nerve.

3. Which of the following structures passes in the iliac fossa between the iliacus and psoas muscles?

   a. Deep femoral artery.
   b. Femoral vein.
   c. Femoral artery.
   d. Femoral nerve.
   e. Lateral cutaneous femoral nerve.

4 Which of the following muscles are innervated by the superior gluteal nerve?

a. Piriformis, gluteus medius and gluteus minimus.
b. Piriformis, gluteus maximus and gluteus minimus.
c. Gluteus maximus , gluteus medius and gluteus minimus.
d. Tensor fascia lata, gluteus medius and gluteus maxims.
e. Tensor fascia lata gluteus medius and gluteus minimus.

5. Which of the following ligaments is intracapsular?

a. Tibio-navicular.
b. Deltoid.
c. Calcaneo-fibular.
d. Anterior-talo fibular.
e. Posterior-talo fibular.

6. The deforming force in Bennetts fracture is applied by the pull of which of the following muscles?

   a. Abductor pollicis longus.
   b. Extensor pollicis longus.
   c. Extensor pollicis brevis.
   d. Opponens pollicis

e. Adductor pollicis.

7. The adductor canal contains all of the following structures, EXCEPT:-

a. Femoral artery.
b. Femoral vein.
c. Saphenous nerve.
d. Nerve to vastus medialis.
e. Deep femoral artery.

8. The main blood supply to humeral head comes from:

a. Posterior circumflex artery.
b. Anterior circumflex artery.
c. Suprascapular artery.
d. Thoracoacromial artery.
e. Subscapular artery.

9. In the wrist, all of the following structures pass superficial to the flexor retinaculum, EXCEPT:-

a. Palmar branch of the ulnar nerve.
b. Palmar branch of the median nerve.
c. Flexor carpi radialis longus tendon.
d. Radial artery.
e. Palmaris longus tendon.

10. The roof of the popliteal fossa is pierced by:-

a. Sural nerve.
b. Small saphenous nerve.
c. Biceps femoris tendon.
d. Gracillis tendon.
e. Upper medial genicular artery.

11. Concerning the femoral artery, all of the following are true,EXCEPT:-

a. It enters the thigh at a point between the medial two thirds and lateral one third between the ant. superior iliac spine and symphysis pubis.
b. It lies on the psoas major tendon.
c. With the femoral vein it is enclosed in the femoral sheath.
d. In the proximal thigh it courses beneath the sartorius muscle.
e. It gives four, small branches below the inguinal ligament.

12) Which statement is NOT TRUE of the ankle joint?

a. It is strengthened by the deltoid.
b. It is a hinge Joint.
c. It is formed by the articulation of the talus and the distal end of the tibia and fibula.
d. It is most stable in the fully plantar flexed position.
e. It is a synovial joint.

13. Unlocking of the knee joint to permit flexion is caused by the action of which muscle?

a. Vastus medialis.
b. Articularis genu.
c. Gastrocnemius.
d. Biceps femoris.
e. Popliteus.

14. The quadrilateral space is bounded by the following, EXCEPT..-

a. Surgical neck of humerus.
b. Long head of triceps.
c. Deltoid.
d. Teres major.
e. Teres minor.

15. The radial nerve gives off the following branches in the posterior compartment of the arm, EXCEPT:-

a. Lateral head of triceps.
b. Lower lateral cutaneous nerve of the arm.
c. Medial head of triceps.
d. Brachioradialis.
e. Anconeus.

16. The Synaptic channels on the end-plate of skeletal muscle are:-

a. Highly selective for Na+
b. Opened when the cell membrane depolarises.
c. Activated by acetylcholine.
d. Inhibited by atropine.
e. Responsible for the relative refractory period.

17. Which ONE of the following proteins is important for skeletal muscle contraction but not for smooth muscle contraction?

a. Actin.
b. Myosin.
c. Troponin.
d. Myosin -adenosine triphosphates (ATPase).
e. Ca2+ -ATPase.

18 .An increase in plasma parathyroid hormone (PTH) level would lead to an increase in which of the following?

a. The number of active osteoblasts.
b. Plasma inorganic phosphate concentration.
c. Renal synthesis of clacitrol.
d. Collagen synthesis.
e. Renal proximal tubular reabsorption of Ca2+

19. Active vitamin D3 (calcitrol) and parathyroid hormone (PTH) have many similar effects. Which of the following physiologic effects is specific only for clacitrol?

a. Increased renal phosphate reabsorption.
b. Increased renal Ca+ reabsorption.
c. Increased plasma Ca2+
d. Decreased plasma Ca2+
e. Decreased plasma HPO4 2-

20. Fatigue-resistant muscle fibers are characterised by high:-

a. Mitochondria concentrations.
b. Myosin-adenosine triphosphatase (ATPase) activity.
c. Velocity of shortening.
d. Strength-generating capability.
e. Glycolytic enzyme concentration.

21. Reciprocal innervation is most accurately described as:-

a. Inhibition of flexor muscles during an extension.
b. Activation of contralateral extensors during a flexion.
c. Reduction of a fiber activity during a contraction
d. Simultaneous stimulation of alpha and gamma motoneurons
e. Inhibition of alpha motoneurons during a contraction.

22. The blood vessels of the systemic circulation responsible for most of the resistance to blood flow in the circulation are the:-

a. Aorta and large arteries.
b. Arterioles.
c. Capillaries
d. Venules.
e. Venae cavae and large veins.

23. What is the first important event in hemostasis following severe tissue injury?

a. Blood coagulation.
b. Formation of a platelet plug.
c. Vascular spasm.
d. Formation of thromboplastin.
e. Formation of prothrombin activator.

24. To what part of the brain do most of the signals from the Golgi tendon apparatus and muscle spindles go:

a. The somsethetic cortex.
b. The thalamus.
c. The basal ganglia.
d. The motro cortex.
e. The cerebellum

25. Macrophages are the mature form of:

a. Neutrophils.
b. Cosmophils.
c. Basophils
d. Monocytes.
e. Lymphocytes.

26. Osteogenesis imperfecta is associated with a defect in the synthesis of :

a. Type 1 collagen.
b. Type 11 collagen.
c. Type IV collagen.
d. Chondroitin sulfate.

b. Keratan sulphate.

27. In acute hematogenous osteomyelitis of childhood, the earliest microscopic changes in bone are in the:-

a. Epiphysis.
b. Metaphyseal-physeal junction.
a. Subperiosteal portion of the metaphysis.
b. Subperiosteal portion of the diaphysis.
c. Metaphyseal diaphyseal junction.

28. An involucrum seen 3 weeks after the onset of acute hematogenous osteomyelitis would consist principally of:

a. Lamellar bone with hematopoietic marrow.
b. Woven bone.
c. A mixture of cartilage and immature bone.
d. Lamellar bone with a fibrous marrow.
e. Endochondral bone.

29. In patients over 60 years of age, secondary osteosarcoma occurs most often in association with:-

a. At site of previous fracture.
b. Paget's disease.
c. Retinoblastoma.
d. Chondrosarcoma.
e. Osteochondroma.

30. T-lymphocytes:

a. Are so called because they are processed by the thymus.
b. Have long life span.
c. Secrete antibodies.
d. Are the major defence mechanism against bacteria
e. Are undetectable in the newborn.

31. Regarding Haemophilia A, ONE of the following statements is true:-

a. Usually presents with purpura in the first year of life.
b. Is inherited in an autosomal recessive pattern.
c. The bleeding time is normal.

d. Is best treated with cryoprecipitate.
e. Is caused by low factor IX levels.

32. All of the following are causes of hypocalcaemia, EXCEPT:-

a. End-stage renal disease.
b. Osteoporosis.
c. Hypoparathyroidism.
d. Magnesium deficiency.
e. Acute pancreatitis.

33. In planning and performing bone biopsy, all true, EXCEPT:-

a. Needle biopsy is preferable when malignancy is suspected.
b. When patient is to be referred to other centre, biopsy should not be done.
c. biopsy taken from metastases is rarely helpful in locating the primary tumour.
d. The centre of the tumour is the most representative part for biopsy.
e. Radioactive technechium given 3 hours before surgery is a technique used to locate the site of lesion for biopsy.

34. In osteosarcoma, all true, EXCEPT:-

a. An Isotope bone scan may be negative.
b. Codman's triangle is pathognomonic X-ray sign.
c. arosteal osteosarcoma is the least malignant type.
d. Would be most malignant when it is secondary to Paget's disease.
e. Metaphyses is the usual site.

35. Osteoid osteoma has never been reported in:-

a. Skull.
b. Transverse process of a lumbar vertebra.
c. Patella.
d. Talus.
e. Phalanges.

36. In rheumatoid arthritis, the main inflammatory cells in the synovial fluid effused are:-

a. Plasma cells.
b. B cells.
c. T lymphocytes.
d. Fibroblasts.
e. Granulocytes.

37. In Villonodular synovitis, all true, EXCEPT:-

a. The pigmentation extends to the bone.
b. The type of Pigmentation is related to the histological appearance
c. The histological appearance is not a prognostic factor.
d. Mitoses is very scanty.
e. Hemosiderin is deposited in histocytes.

38. In arthrogryposis multiplex congenita, the most persistent pathological finding at autopsy is:-

a. Structural abnormality in connective tissue collagen.
b. Structural abnormality in skeletal muscle.
c. Abnormality in the dermis of skin.
d. Decreased number of anterior horn cells of spinal cord.
e. Decreased number of motor end plate of muscles.

39. The following are physiological events in the heamostatic process. EXCEPT:-

a. Epinephrine secretion.
b. Vascular constriction.
c. Platelet plug formation.
d. Fibrin formation.
e. Fibrinolysis.

40. The following are true about anticoagulation EXCEPT:-

a. The incidence of bleeding complication of heparin is reduced with a contiguous infusion technique.
b. The anticoagulant effect of coumarin is reduced in patients receiving corticosteroids.
c. The phenomenon of "heparin rebound" is the increased risk of thrombosis after adequate postoperative heparin antagonism.
d. Parenteral administration of vitamin K is indicated in elective surgical treatment of patients with biliary obstruction.
e. In hypoprothrombinemia due to hepatocellular dysfunction,,vitamin K therapy is in effective in controlling bleeding tendency.

41. The following are true about acquired hypofibrinogenemia (defibrination syndrome, D.I.C), EXCEPT:-

a. The fibrinogen deficiency is usually an isolated defect.
b. Systemic bleeding dominates the clinical manifestation and thrombi are rarely found at autopsy.
c. The syndrome is caused by the introduction of thromboplastic materials is to the circulation.
d. If there is active bleeding, hemostatic factors should be replaced with fresh frozen plasma, cryoprecipitate and platelet concentrates.
e. Fibrinolytic inhibitors (E-aminocaproic acid) should not be used without poor effective anti thrombotic treatment with heparin.

42. Regarding the elbow joint, the following are true, EXCEPT:-

a. It serves as a fulcrum for the forearm lever.
b. It is a weight bearing joint in patients using crutches.
c. Axis of rotation for flexion/extension is the centre of the trochlea.
d. Axis of pronation/supination is a line from trochlea through upper ulna to distal radius.
e. Dynamic loads around the elbow exceed body weight.

43. Regarding the wrist bio-mechanics, the following are true, EXCEPT:-

a. Flexion/extension are primarily radio-carpal by 2/3.
b. Radial deviation is primarily inter-carpal movement.
c. Ulnar deviation is inter-carpal and radio-carpal movement.
d. The carpus makes up a system of three link in a chain, radius- lunate-capitate.
e. Stability depends on the three link system.

44. Regarding hip mechanics, the following are true , EXCEPT:-

a. The joint reaction force is 3-6 times body weight.

b. Joint reaction is due to contraction of muscles crossing the joint.
c. A cane in the contra-lateral hand can reduce joint reaction force by 6%
d. Trendelenburge gait (shifting body weight over the hip) increases joint reaction force.
e. Lateralization of the greater trochanter reduces the joint reaction force.

45. Regarding bio-mechanics of the knee joint, the following are true, EXCEPT:-

a. At 90 degrees of flexion, 45 degrees of external rotation and 30 degrees of internal rotation are possible.
b. Tibio-femoral joint surfaces are subjected to a loading force equal three times body weight in level walking.
c. Patello-femoral joint load ranges from 1/2 body weight to seven times body weight with squatting and jogging.
d. Arthrodesis 0-7 degrees valgus, 10- *1* 5 degrees flexion.
e. Mechanical axis along shafts of femur and tibia.

46 Regarding bio-mechanics of the shoulder joint, the following are true, EXCEPT:

a. The scapular plane is 30 degrees anterior to the coronal plane.
b. Abduction requires external rotation to avoid impingement of greater tuberosity.
c. Abduction is due to glenohumeral motion 90 degrees and scapulothoracic motion 90 degrees.
d. Fusion position is 50 degrees of true abduction, 20 degrees of forward flexion and 25 degrees of internal rotation.
e. The ligaments mainly middle and inferior glenohumeral and rotator cuff are mainly responsible for stability.

47. In cerebral palsy (C.P.) patients, the following are true, EXCEPT:-

a. Hyperextension in the knee during stance phase is a common feature.
b. Normally, during mid stance there is a moment tending to extend the knee joint, which aggravate hyperextension in CPS.
c. Long term damage to the knee can be minimised by controlling hyperextension.

d. Eliminated ankle motion can effectively control knee hyperextension by fixed ankle foot orthosis.
e. Knee orthosis is used to prevent hyperextension in C.P patients.

48. To prevent postoperative wound infections in orthopaedics, the following are true, EXCEPT:-

a. Single dose of antibiotic administered before the start of surgery is as effective as a 48 hours regimen.
b. First generation cephalosporine or vancomycine are the most frequently used antibiotic
c. Haematoma evacuation should only be accomplished in the operating room, suction, drain system use is controversial.
d. Horizontal laminar airflow reduces the number of bacteria at the wound, instrument table and periphery of operating area.
e. Bacteria on the gloves come from the surgeons hands.

49. Regarding infection, the following statements are correct, EXCEPT:-

a. Staphylococcus aureus accounts for 80% of all osteomyelitis

b. Technetium 99m diphosphonate bone scan within 24 hours is of higher sensitivity and specificity than MRI.
c. C-reactive protein is better than ESR for monitoring the course of the infection.
d. The standard length of parenteral treatment is 4-6 weeks.
e. The bacteria resistance to antibiotics develops by either genetic exchange or genetic mutation.

50. Regarding risk Patients perioperative medical management, the following statements are correct, EXCEPT:-

a. Mild to moderate hypertension is not associated with increased surgical risk.
b. Determination of preoperative baseline arterial blood gases should be considered in patients with underlying lung diseases.
c. Rheumatoid arthritis who have been on steroids for the past year need perioperative stress doses of steroids.
d. Patients with diabetes are at increased risk for postoperative infection, but not wound healing.
e. Delirium may be the first manifestation of fat embolism.

51. Regarding osteoarthritis (O.A), the following statements are correct, EXCEPT:-

a. O.A cartilage is highly irregular, fibrillated and hypertrophied in unloaded areas.
b. Repetitive , excessive stress on normal joint is not a cause.
c. Malformations causing compromised joint mechanics is a cause.
d. New subchondral bone formation is an early event
e. The early correction of malalignment delay or prevent progression of 0.

52. Regarding skeletal dysplasias, the following are true, EXCEPT:-

a. Skeletal dysplasias are inherited disorders of bone and cartilage growth and development.
b. A chondroplasia is an autosomal dominant disorder.

c. Mutation of the gene coding for the type 11 collagen is the cause of chondroplasia.
d. Genu varum is the most common orthopaedic problem of a chondroplasia of childhood.
e. Functional benefits does not overweight the considerable expense morbidity and risk of limb lengthening in a chondroplasia.

53. Arthogryposis multiplex congenita implies multiple congenital joint contractures. The term has been applied to a board spectrum of genetic and sporadic disorders, regarding the orthopaedic manifestations of these disorders, ONE of the following is FALSE:

a. Myopathic arthrogryposis is characterised by severe symmetric involvement of both upper and lower extremities.
b. Extensive soft tissue release, excision of tendons and talus is required to produce plantigrade feet.
c. Significant recurrence of knee flexion deformity after surgery may require repeated extension osteotomy of distal femur.
d. Bilateral hip dislocation can be similarly treated with excellent results.
e. Arthrogrypotic patients can adapt to upper extremity contractures quite well.

54 The following are adverse effects of homologous transfusion, EXCEPT:-

a. HIV transmission due to the window period.
b. Transmission of hepatitis.
c. Transfusion boost up immunologic response.
d. Increase the incidence of postoperative infection.
e. Increases risk of recurrence and metastases in some cancer patients

55. The symptom complex of shock usually results from one or more of a number of separate but interrelated dysfunctions; these dysfunctions are least likely to involve:

a. The heart.
b. Blood volume.
c. Haemoglobin concentration.
d. The resistance of arteriolar vessels.
e. The capacity of venous vessels.

56. The earliest manifestations of serious gram-negative infection may consist of triad of signs that include:-

a. Tachypnea, hypotension, and an altered sensorium.
b. Tachypnea , hypotension , and lactic acidosis.
c. Thrombocytopenia, hypotension and lactic acidosis.
d. Mild hyperventilation , respiratory alkalosis , and an altered sensorium.
e. Neutropenia, hyperventilation and metabolic acidosis.

57. The following are static contributors to glenohumeral stability, EXCEPT:-

a. Rotator cuff.
b. Inferior glenohumeral ligament complex.
c. Coraco humeral ligament.
d. Intra artricular pressure.
e. Superior glenohumeral ligament.

58. Regarding force transmission across the elbow joint, the following are true, EXCEPT:-

a. Radiocapitular joint loading increase in pronation.
b. Medical collateral ligament complex repair reduce loading across radiocapitular joint.
c. Peak radiohumeral and ulnohumeral forces at 30 degrees of flexion is greater than four times body weight (Calculated 3200 N)
d. Push up exercise exert forces across the elbow averaging 45% of body weight.
e. Force transmission is greater through ulnohumeral joint than radiocapitullar joint.

59. Regarding immunology of the allografts in tissue transplantation, the following are correct, EXCEPT.

a. In human the MHC (major histocompatibility complex) are named HLA (human leukocyte antigen).
b. In human race not all histocompatibility antigens have been identified.
c. Class Ill MHC genes have a major influence in transplantation.
d. HLA class 1 molecules can be detected on the cell surface of all nucleated cells.
e. HLA class 11 molecules are found only on cells of the immune system.

60) In histocompatibility matching, the following are true, EXCEPT:-

a. Serologic method or leukocyte typing is the best current method.
b. HLA antigens can be routinely determined in serologic method.
c. Weaker histocompatibility antigens have not been detected by serologic technique.
d. It is best determinant when family donors are utilized.
e. HLA identical recipients and donors does not require immunosuppressive drugs to prevent rejection.

61. The following are physiological events in the heamostatic process, EXCEPT:-

a. Epinephrine secretion.
b. Vascular constriction
c. Platelet plug formation.
d. Fibrin formation.
e. Fibrinolysis.

62. The following are true about acquired hypofibrinogenemia (defibrination syndrome, D.I.C), EXCEPT:-

a. The fibrinogen deficiency is usually an isolated defect.

b. Systemic bleeding dominates the clinical manifestation add thrombi are rarely found at autopsy.
c. The syndrome is caused by introduction of thromboplastic materials into the circulation
d. If there is active bleeding, hemostatic factors should be replaced with fresh frozen plasma, cryoprecipitate and platelet concentrates.
e. Fibrinolytic inhibitors (E-aminocaproic acid) should not be used without prior effective antithrombotic treatment with heparin.

63. Following injury, the following occur EXCEPT:-

a. Change in fluid and electrolyte metabolism.
b. Change in acid-base status.
c. Change in renal function
d. Increased sensation of thirst as a result of sedation or anaesthesia.
e. Reduction in effective circulating volume

64. The following are true about sequestration of fluids (third spaces) following injury, EXCEPT:-

a. Sequestration of fluids is the result of alteration in capillary permeability consequent to injury, ischemia or inflammation.
b. It has the same composition of extra-cellular fluid.
c. The total extra-cellular fluid space is increased.
d. The functional extra-cellular volume is decreased.
e. Diuretics are used to reduce the volume of the third space.

65. The following are true about immediate postoperative fluid management, EXCEPT:-

a. In the first 24 hours, I.V. fluids are ordered one litre at a time, as it is difficult to estimate fluid requirements.
b. Several litres of extra-cellular fluid may be deposited at site of operative trauma in the first few hours.
c. A blood pressure of 90/60 and pulse rate of less than 120 are not sufficient to prevent renal ischaemia.
d. Urine output of 15-20ml/hour indicates adequate circulatory status.
e. It is unnecessary to administer K+ during the first 24 hours, unless there is definite deficit.

66. All of the following statements regarding tetanus are true, EXCEPT:-

a. The presence of clostridium tetani or its spores in a wound is not necessarily followed by tetanus.
b. The average incubation period for the disease is seven to eight days after injury.
c. Tetano spasmin toxin is responsible for the majority of the clinical picture.
d. Tetanus occurring as a complication of narcotic addiction has a mortality rate of approximately 90 percent.

e. Recovery from tetanus provides subsequent immunity.

67. All of the following statements concerning early tangential excision(escarectomy)of burn wounds are true, EXCEPT,.-

a. The procedure entails significant blood loss.
b. In patients with severe smoke inhalation the procedure should be done under local anaesthesia.
c. By expediting healing in burns around joint, the procedure preserves joint function.
d. The procedure is carried out until good capillary bleeding.
e. When tissue destruction extends through the dermis , it is difficult to appreciate tissue viability.

68. Whether the nutritional needs of a patient 10 days after a major burn are being met is best assessed by:-

a. Caloric counts.
b. Measurement of daily body weight.
c. Measurement of red cell mass.
d. Measurement of serum albumin levels.
e. Nitrogen balance studies

69. The most frequent nonbacterial opportunistic organism recovered from burn wounds is:-

a. Aspergillus.
b. Fusarium.
c. Phycomycetes.
d. Herpes.
e. Candida.

70. A patient who develops severe symptoms shortly after bitten by a honey bee should be treated with:-

a. Epinephrine.
b. Prednisone.
c. Propranolol.
d. Tracheostomy.
e. Dopamine

71. In the therapy of haemorrhagic shock, the best clinical sign of successful fluid resuscitation is:-

a. An increase in blood pressure.
b. An increase in urine output.
c. An increase in arterial oxygenation.
d. A decrease in thirst.
e. A decrease in tachycardia.

72. An adult who sustains a burn involving the entire surface of the right upper limb, one-half of the anterior trunk, and one-third of, the right lower limb has burned what percentage of total body surface?

a. 14 %

b. 19 %
c. 24 %
d. 29 %
e. 34 %

73. A patient who sustains an electrical injury involving his left arm with burn of the forearm, develops cold hand, and absence of pulses by Doppler examination. His vital signs are stable. The next step in management of his arm should be:-

a. Arteriography.
b. Exploration of the brachial artery.
c. Given dextran intra arterial.
d. Fasciotomy.
e. Given papaverine intra arterial.

74. The first sign of fat embolism is:-

a. Dyspnea.
b. Tachpnea.
c. Tachycardia.
d. Mental confusion.
e. Peticheal rash.

75 . All of the following are true about fat embolism, EXCPPT:-

a. Pulmonary hypertension is part of it.
b. The free fat is directly toxic to lung tissue.
c. The level of consciousness is directly proportional to the amount of fat embolus in the brain.
d. Fat embolism can occur in absence of trauma or surgery.
e. The fat recovered from lung and brain is similar to that in bone marrow.

76. All of the following are causes of haematomas after surgery EXCEPT:-

a. Infection.
b. Subcutaneous procedures.
c. Hereditary coagulopathy.
d. Post operative cough.
e. Use of local lignocain with adrenaline.

77. All of the following are causes of post operative fever, EXCEPT:-

a. Antibiotics.
b. Myocardial infarction.
c. Pulmonary embolism.
d. Fat embolism.
e. Massive crystalloid fluid transfusion.

78. The commonest cause of postoperative fever within 24 hours of the operation is:-

a. Atelectasis.
b. Staphylococcal wound infection.
c. Urinary tract infection.

d. Bacteraemia.
e. Blood transfusion.

79. Regarding the use of hyperbaric oxygen in the treatment of necrotising soft tissue infection, all of the following are true, EXCEPT:-

a. Its use should start when the diagnosis is made.
b. Should not be used before surgical debridement.
c. It inhibits the production of alpha toxin by clostridium.
d. It does not improve the outcome for patients affected by non clostridial organisms.
e. It can cause pneumothorax.

80. Regarding prophylactic antibiotics, all of the following are true ,EXCEPT:-

a. It should be given 30-60 min. before operation.
b. It should be repeated during the operation if blood loss has been great.
c. It should not continue beyond the day of the operation.
d. It should be repeated if the operation lasts longer than four hours.
e. Combination of first generation cephalosporin with gentamycin is the drug of choice.

81. Regarding vascular catheter related infection, all of the following are true EXCEPT:-

a. Central venous catheter have higher infection rate than do peripheral catheters.
b. Polyethylene catheters have a higher infection rate than silastic catheters.
c. The most common source of catheter sepsis is believed to be micro-organisms originating from distant site via the blood stream.
d. The use of multilumen catheters is associated with higher infection rate
e. Transparent plastic dressing increase the risk of infection two to fourfold compared with traditional gauze dressings.

82. All of the following are criteria of deep wound infection, EXCEPT:-

a. Occurs at the operation site in no more than 8 weeks after operation if no implant was used.
b. Occurs within one year if an implant was placed.
c. Involves tissues at the fascial layer.
d. Involves spaces beneath the fascial layer,
e. An abscess found directly under the incision.

83. Regarding necrotising soft tissue infections, all are true EXCEPT:-

a. In most cases it is caused by clostridium species.
b. The overlying skin may appear normal.
c. The presence of gas in the tissue indicates the production of insoluble gases.
d. Computed tomography is a sensitive method of detecting soft tissue gas.
e. Early mental confusion may be among the earliest clues to its presence.

84. The following are true about neuro-endocrine and autonomic responses initiated by haemorrhage, EXCEPT:-

a. These responses are at maximum when there is 30-40% loss of blood volume.

b. There is an increase in the activity of the baro-receptors and stretch receptors.

c. Release of insulin is inhibited for a given level of glucose.

d. Increased secretion of aldosterone.

e. Increased release of pituitary hormones.

85. The following are true about catecholamines in response to injury, EXCEPT :-
    a. They are immediately released with a peak concentration of 24 to 48 hours after injury.
    b. There is a positive correlation between plasma glucose and catecholamine concentration
    c. They cause hormonal modulation to produce increased secretion of T3 and T4
    d. They cause hepatic glycogenesis
    e. They inhibit insulin stimulated glucose up take in skeletal muscles.

86. In metabolism after injury, all are true EXCEPT :
    a. The ebb phase is characterised by hyperglycaemia and restoration of circulating volume
    b. The flow phase is characterised by hypermetabolism
    c. The flow phase lasts for weeks irrespective of the severity of the injury.
    d. The catabolic part of flow phase continues despite correction of injury deficits
    e. The duration of anabolic part of flow phase is considerably longer than the catabolic part.

87. The following are true about protein metabolism in response to injury, EXCEPT :
    a. Daily urinary excretion of nitrogen is 30-50 gm.
    b. There is increased breakdown of intra-cellular compounds.
    c. The chief source of proteolysis during injury are liver and kidneys.
    d. Minor injury, results in decreased protein, synthesis and normal rate of protein breakdown.
    e. The Magnitude of nitrogen loss is elated to age, sex physical Condition of patient

88. The current concepts of fracture healing are mainly based on blood supply and stability,
    the following are true regarding fracture healing, EXCEPT :
    a. Bio-mechanical forces and elective currents are translated into bio-mechanical mediators (bone prostaglandins PCE2, morphogens and growth factor).
    b. Fracture ends has no osteogenic effect on bone healing
    c. Movement of the fragments increases the fracture exudate with migrating cells and Sprouting vessels.'
    d. Weight bearing stimulates growth factors and PGE2
    e. Cartilage is formed in well vascularized granulation tissue.

89. Basic principles of infected non union management are the following, EXCEPT:-

    a. Control of infection.
    b. Establish bone continuity.
    c. Correct leg length discrepancy.
    d. Immobilisation.
    e. Achieve skin cover.

90. In bone graft terminology, the following statements are correct EXCEPT ONE:

    a. Isograft is transplanted between genetically identical members of the same species.
    b. Are classified according to their tissue composition.
    c. Are classified according to their preservation method.

d. Are classified according to their genetic disparity between the donor and recipient.
e. Transferred bone requires transplanted cells to survive and function to participate in regeneration.

91. Regarding fresh bone autografts, the following are advantages, EXCEPT ONE:-
a. Optimal biologic behaviour.
b. No transfers of disease.
c. Little dependence on host bed.
d. Histocompatable.
e. Best choice when donor site morbidity in acceptable and supply is sufficient.

92. Bone grafting has become an increasingly important part of re-constructive orthopaedic surgery in cases with severe bone- stock deficiency, the following are correct, EXCEPT:
a. Basic function of a graft is to enhance osteogenesis.
b. Basic function of graft is to restore structural integrity.
c. In osteo-induction the graft plays a passive role.
d. Osteo-conduction is the process of capillary ingrowth and influx of osteo-progenitor cells, the graft is a scaffold.
e. Bone morphogenic protein stimulates host tissue to form osteogenic elements

93. Regarding mechanisms of wound healing and how they contribute to various types of closure, the following are correct, EXCEPT:

a. Collagen synthesis deposition and cross linking are of primary importance in primary repair.

b. Secondary wound closure is carried out by sutures when the wound is clean.

c. Peroxides and iodopores are to be avoided in open wounds dressings.

d. Spontaneous closure of open wounds by contraction is called secondary closure.

e. Neo dermis is induced by epithelialization in venous stasis ulcer and partial thickness wounds healing.

94. The following are specific events of phases of healing of acute primarily closed wound, EXCEPT:-
a. Coagulation.
b. Inflammation.
c. Lag phase.
d. Fibroplasia.
e. Remodelling.

95 . Regarding collagen synthesis and deposition, the following are true, EXCEPT:

a. Collagen is the major component of extra-cellular matrix of soft tissues, tendons, ligaments and bone.

b. Collagen is synthesized on ribosomes on the rough endoplasmic reticulum.

c. Lack of ascorbic acid and oxygen compromise collagen production leading to insufficient wound strength.

d. The collagen molecule is formed of three polypeptide chains stabilized another by covalent bonds.

e. Penicillamine is a collagen cross link inhibitors.

96. Common attributes of malignant neoplasms include all of the following, EXCEPT:

a. Increased unnuclear : nuclear ratio.
b. Hypochromatin.
c. Increased nuclear cytoplasmic ratio.
d. Aneuplody
e. Mitotic activity.

97. Which one of the following chemotherapeutic agents has nephrotoxicity as an important side effect ?

a. 5 fluorouracil
b. Methotrexate
c. Actinomycin D
d. Cis platinum
e. Nitrogen

98. Exposure to ionising radiation may give rise to all of the following neoplasms, EXCEPT :

a. Osteosarcoma
b. Papillary carcinoma of the thyroid
c. Neuroblastoma
d. Leukaemia
e. Testicular cell carcinoma

99. The adult respiratory distress syndrome (ARDS) seen within 24-48 hours after major trauma may be caused by ONE of the following, EXCEPT :

a. Overzealous crystalloid replacement
b. Transfusion of inadequately filtered bank blood
c. Sepsis
d. (DIC) disseminated intra-vascular coagulopathy
e. Fat embolism

100. The most valuable parameter(s) in confirming adequate organ perfusion in the injured patient are :

a. Pulmonary capillary wedge (PCW) pressure
b. Central venous pressure (CVP) and urine output
c. Nail bed coloration
d. Chest auscultation
e. Systolic blood pressure

Trauma of the lower limbs

1. What is the most common source of loose bodies in the knee?

1. osteophytes

2. meniscal fragments

3. synovial osteochondromatosis

4. osteochondritis dissecans.
5. Forgein body.

2. Tibial osteotomy is indicated for correction of varus deformity of the knee in a young adult with which of the following conditions:

1. Alkaptonuria

2. Psoriatic arthritis

3. Rheumatoid arthritis

4. osteochondritis dissecans
5. meniscal injury.

3. Which of the following factors is characteristic of the early changes seen in the articular cartilage of a patient with osteoarthritis?

1. Decrease in water content

2. Decrease in the DNA per unit tissue

3. Increase in relative collagen concentration.

4. Increase in proteoglycan aggregation.

5. increase in water content.

4. Avulsion fracture of the proximal lateral tibia (Segond's fracture) in twisting injures is pathognomonic of:

a. torn medial meniscus
b. torn anterior cruciate lig.
c. fracture of the lateral tibial plateau
d. torn lateral collateral lig.
e. dislocated knee.

5. A 23 old man experiencing impotence and penile numbness following intramedullary nailing for a femoral shaft fracture is most likely due to:

a. unrecognized urologic trauma
b. injury to S2-S3
c. pudendal nerve injury
d. posttraumatic stress
e. pudendal artery injury.

6. Midshaft fibular osteotomy places which of the following structures most at risk of injury:

1. sural nerve

2. peroneal artery
3. deep peroneal nerve
4. anterior tibial artery
5. palsy of the peroneal muscle.

7. A man report anterior knee pain, especially with stair climbing or squatting. Examination reveal no evidence of patellar malalignment . Radiographic and MRI studies are normal. Which of the following would best demonstrate the pathology?

1. Ultrasound
2. CT scan
3. Arthrogram
4. Technetium-99 bone scan
5. EMG.

8. Upon detachment of the Quadratus femoris muscle, brisk bleeding is noted, which of the following arteries is most likely injured?

a. Branch of the obturator
b. Descending branch of the inferior gluteal
c. Ascending branch of the medial femoral circumflex
d. Transverse branch of the lateral femoral circumflex
e. descending branch of the medial femoral circumflex.

9. During four compartment fasciotomy for compartment syndrome of the leg, what nerves are decompressed in the anterior and lateral compartments respectively ?

a. Posterior tibial and superficial peroneal
b. superficial peroneal and sural
c. Deep peroneal and sural
d. Deep peroneal and superficial peroneal
e. anterior tibial and deep peroneal.

11. When using intramedullary nails for fractures of the femoral shaft in adolescents , the entry point should be moved away of from the piriformis fossa to avoid injury to what structures?

a. Greater trochanter apophysis
b. posterior superior ascending branch of the medial femoral circumflex artery
c. posterior inferior ascending branch of the medial femoral circumflex artery
d. ascending branch of the lateral femoral circumflex artery
e. metaphyseal blood supply to the neck of femur.

12. In external fixation for fracture pelvis all are true except

a. fast and effective method of early stabilization
b. reestablish pelvic ring and pelvic volume
c. decreases blood loss in pelvic fractures
d. Best used for patients with floating iliac wings
e. reestablish the pelvic volume.

13. In angiography for pelvic bleeding all are true except

a. small percentage of patients with pelvic fractures will benefit from angiography and immobilization
b. The majority of blood loss is arterial
c. Prior to angiography other sources of bleeding should be ruled out
d. Stabilization of the fracture in haemodynamic unstable patients should be done prior t angiography
e. top emergency when needed.

14 . In pelvic fractures all are true except

a. Concomitant urologic injures occur in approximately 15%
b. Blood at the meatus and high prostate are most common findings of bladder injury
c. The incidence of bladder injures correlates with the number of pubic rami fractured
d. Repeated examination of an unstable pelvic fractures may lead to greater blood loss
e. stabilize the pelvis in unstable patient.

. 15. All of the following methods can be used in the control of hemorrhage associated with pelvic fractures except:

a. Early reduction and immobilization
b. Embolisation
c. Inflated inter arterial balloon
d. Infusion of vasoconstrictor agents
e. open reduction and internal fixation.

16. The compressive force across the patellofemoral joint while descending stairs is equivalent to:

a. body weight
b. 2 to 3 times body weight
c. 3 to 4 times body weight
d. 4 to 5 times body weight
e. 5 to 6 times body weiht

17. Exertional herniation of muscle through a fascial defect in the anterolateral aspect of the lower leg can cause entrapment of which of the following:

a. Sural
b. saphenous
c. Deep peroneal
d. superficial peroneal
e. anterior tibial

Trauma of the upper limb

1. Which of the following nerves is most likely to be injured during percutaneous pinning of pediatric supracondylar humeral fractures?

1. Ulnar
2. median
3. radial
4. lateral antibrachial

2. What is the primary static restraint to anterior translation of the humeral head in relation to the glenoid at 90 degrees of abduction?

1. infraspinatus muscle
2. pectoralis major muscle
3 .superior glenohumeral ligament
4. inferior glenohumeral ligament

3. In which of the following types of fractures of the humeral shaft does transection of the radial nerve occur most often?

1. Transverse through the distal third
2. short oblique through the middle third
3. long oblique through the middle third
4. spiral oblique through the distal third

4. After what length of time does tardy ulnar nerve pulsy following fracture of lateral condyle occur ?

1. 2 weeks
2. 1 month
3. 1 year
4. 20 years.

5. What nerve is most commonly injured following Monteggia fracture –dislocation of the forearm in adults?

1. Ulnar
2. Radial
3. median
4. Posterior interosseous nerve

6. Which of the following nerves is most often injured in extension-type supracondylar fractures of the elbow?

1. Ulnar
2. Radial
3. median
4. median antibrachial cutaneous nerve

7. Loss of forearm rotation after radial neck fracture in 8 year child is most likely to occur as a result of :

1. growth abnormality

2. displacement of 3 mm
3. lateral collateral ligament disruption
4. angulation of 30 degrees

8. Where should the anterior humeral line normally pass on a lateral radiograph of a child's elbow ?

1. anterior to the capitellum
2. through the anterior third of the capitellum
3. through the middle third of the capitellum
4. through the posterior third of the capitellum

9. A runner who falls on his outstretched arm sustain a non displaced fracture of the radial head. Examination 24 hours later reveals intact sensation but isolated weakness of the thumb and index finger extension and forearm supination . These are most likely due to:

1. acute C7 disk rupture
2. acute muscle inhibition due to fracture
3. neurapraxia of the posterior interosseous nerve
4. avulsion of the extensor muscles from lateral epicondyle

10. Which of the following structures is the primary constraint to posterolateral rotatory instability of the elbow?

1. radial head

2. annular ligament

3. ulnar part of the lateral collateral lig.

4. radial part of the lateral collateral lig.

General

1. The most common organism from the puncture of a nail through the sole of a tennis shoe is:
   a. Pseudomonas aeruginosa
   b. S. Aureus
   c. Posteurella multocida
   d. Str. pyogenes

2. The most sensitive monitor of the course of infection in a child with acute osteomyelitis is:
   a. ESR
   b. C- reactive protein
   c. WBC count .
   d. Repeated cultures.
3. The most commonly isolated organism in necrotizing fasciitis is:
   a. Group A strep.
   b. Clostridium perfringens
   c. S. aureus

d. Staphalococcus epidermidis

4. The following are causes of generalized osteoporoses except:
   a. Prolonged recumbency
   b. Protein deficiency
   c. Glucocorticoids excess
   d. Hypothyroidism
5. In cretinism the following are correct except:
   a. Hypothyroidism present from birth
   b. Bone growth is delayed
   c. early epiphyseal closure occur
   d. growth hormone secretion is depressed

Foot and Ankle

1. In lateral subtalar dislocation of the foot, and attempts at closed reduction fail. Which of the following structures most likely preventing reduction?
   a. Tibialis anterior
   b. Tibialis posterior
   c. Peroneal longus
   d. Extensor digitorum communis
2. Concerning the anterolateral approach to the ankle, all the following are true except:
   a. It gives excellent access to the ankle joint
   b. It avoids all important vessels and nerves
   c. dorsalis pedis artery lies laterally in the wound
   d. The deep peroneal nerve lies medially
3. The normal Bohler's angle of os calcis is:
   a. 5 degrees
   b. 10 degrees
   c. 15 degrees
   d. 30 degrees
4. Morton's metatarsalgia is characterized by one of the followings:
   a. Presenting symptom is numbness in the region of the 3rd and 4th metatarsal heads
   b. It is caused by a neuroma between the heads of the 3rd and 4th metatarsals
   c. The symptoms occur when the patient walks bare footed
   d. Surgical treatment is associated with high recurrence rate

5. In charcot- Marie Tooth disease all are true except:
   a. Males are affected than females
   b. The more late the onset the more sever the presentation
   c. Clowing of the toes , cavus of the foot and ankle equinus is late manifestations .
   d. Is a hereditary neurologic disorder characterized by weakness of peroneal muscles